Sex-Role Salience in the Self-Concept and in the Perception of Others: Implications for Sex-Role Consistency and Psychological Adjustment

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ABSTRACT

SEX-ROLE SALIENCE IN THE SELF-CONCEPT AND IN THE PERCEPTION OF OTHERS: IMPLICATIONS FOR SEX-ROLE CONSISTENCY AND PSYCHOLOGICAL ADJUSTMENT

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Researchers have recently directed attention to the influence of cognitive factors on the development of sex-role orientation and sex-role stereotyping. The present study examined one such cognitive construct, sex-role salience, and its relationship to sex-role orientation and sex-role stereotyping. Its ability to predict sex-role interests and psychological adjustment was also assessed. Sex-role salience refers to the degree to which individuals spontaneously process information about themselves and others in sex-role related terms. Three methods of measuring sex-role salience were proposed, two of these derived from schema theory. Schemata are cognitive structures or categories, characterized by rich associative networks, which facilitate the encoding and retrieval of schema-consistent information. The first measure, taken from the work of Bem examined sex-role schemata (salience) in the self-concept. This task measured decision times for the endorsement and rejection of masculine and feminine traits. The second, a recognition task designed for this

study, is a measure of sex-role schematic processing in the perception of others. The third, a matching test, evaluated the extent to which individuals use sex role as a dimension for matching items and people. Subjects in the study were one hundred and seventy undergraduate students, divided into sex-role orientation groups by means of the Bem Sex Role Inventory. The results provided confirming evidence for the tenets of schema theory. Sex-typed subjects performed as would be expected of individuals with well-articulated schemata on the dimension of sex roles, endorsing schematic (stereotyped) traits more quickly than subjects of other groups. A greater efficiency (speed and accuracy) in processing schematic and counterschematic material compared to neutral, in the perception of others, was also demonstrated. The ability of one measure to predict adjustment in sex-typed subjects was also established. This study proposes a method of examining the cognitive processes underlying sex-role orientation and sex-role stereotyping and provides suggestions for further research.

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The psychological implications of sex roles have been of interest to researchers for nearly half a century (e.g., Terman and Miles, 1936). Sex role refers to that set of characteristics that individuals possess (e.g., traits, attitudes, interests, behaviors) and which are believed to be "appropriate for them, because they are male or female" (Pleck, 1977, p. 182). Attitudes about sex roles have been shown to influence both self-concept (Deutsch & Gilbert, 1976; Rosenkrantz, Vogel, Bee, Broverman & Broverman, 1968; Storms, 1979) and perception of others (Broverman, Vogel, Broverman, Clarkson & Rosenkrantz, 1972; Deutsch & Gilbert, 1976; McKee & Sherriffs, 1957). For many years the investigation of each of these areas has been conducted independently of the other. The influence of sex roles on the self-concept (sex-role orientation) was assessed by psychologists with an interest in personality; while the effect of sex roles on the perception of others (sex-role stereotyping) was the research domain of the social psychologist. Today, because of changes in the instruments used to measure sex-role orientation (or sex-type) (Bem, 1974; Berzins, Welling & Wetter 1978; Heilbrun, 1976; Spence, Helmreich & Stapp, 1975) and an interest in the cognitive components of both sex-role stereotyping in the perception of others and sex-typing in the self-concept (Ashmore & Del Boca, 1979; Bem, 1981, 1982; Crane & Markus, 1982; Garnets & Pleck, 1979; Liben & Signorella, 1980; Marcus & Overton, 1978; Markus, Crane, Bernstein & Siladi, 1982), the boundaries between the two areas are beginning to fade.

Recently developed instruments designed to assess sex-role orientation define masculinity and femininity in terms of adherence to cultural sex-role stereotypes. This represents a significant change in the thinking of sex-role theorists. Earlier tests developed to measure these constructs relied on the ability of items to discriminate between the sexes. Masculinity and femininity were viewed as opposite endpoints on a single bipolar dimension, thereby precluding the possibility of an individual being characterized as both masculine or feminine or as neither (Constantinople, 1973). An "appropriate" sex-role identity (i.e., a pattern of personality traits, attitudes and interests, typical for one's gender (Pleck, 1977)) was considered to be an essential component of psychological adjustment. An atypical pattern was associated with confusion and maladjustment (Berzins et al., 1978).

Over the years researchers (Jenkin & Vroegh, 1969; Lunneborg, 1972; Lunneborg & Lunneborg, 1970; Nichols, 1962) have produced evidence which seriously challenged several of the assumptions underlying the construction of the early masculinity-femininity scales. The bases for item inclusion and the bipolar nature of masculinity-femininity, as well as the relationship of this construct to psychological adjustment have all been questioned. In the seventies new scales were developed in an attempt to overcome many of the limitations of earlier tests (Bem, 1974; Berzins et al., 1978; Heilbrun, 1976; Spence et al., 1975). In contrast to traditional tests, these scales treat masculinity and femininity as complementary characteristics measured on two separate unipolar dimensions. The

existence of masculine and feminine characteristics within the same individual, regardless of sex, is called androgyny. Androgyny theorists consider a rigid adherence to only masculine or feminine traits to be psychologically limiting (Bem, Note 1). Androgynous individuals are thought to exhibit greater "sex-role adaptibility" across situations; and therefore, they are predicted to be better adjusted than sex-typed individuals (Bem, Note 1).

The most widely used scales of sex-role orientation are the Bem Sex Role Inventory (BSRI) (Bem, 1974) and the Personal Attributes Questionnaire (PAQ) (Spence et al., 1975). On both tests, feminine items generally refer to nurturant or expressive characteristics, whereas masculine items reflect instrumental behaviors. Traits included on masculinity and femininity scales are those judged to be more typical of (or more desirable for) one sex than the other. An individual's sex-role classification is determined by his/her rating of these items. If his/her average scores on both masculine and feminine items fall above the median of the referent group, an individual is classified as androgynous; if both fall below the median he/she is labelled undifferentiated. If only one score falls above the median he/she is sex-typed (sex-congruent traits higher) or cross-sexed.

Although there is general agreement regarding the content of masculinity and femininity and the method of their measurement, several issues remain unresolved in the sex-role literature: 1) Why are sex-role stereotypes so persistent despite what appears to be

widespread attitude change regarding sex roles? 2) Can sex-role behaviors (e.g., attitudes, interests, etc.) be predicted from sex-role orientation? 3) What is the relationship between sex-role orientation and psychological adjustment? The recent focus on cognitive processes in sex-typing and sex-role stereotyping may provide some answers to these questions.

The influence of cognitive factors on the development of sex-typing and sex-role stereotyping has recently received some consideration. Bem (1979) introduced the notion that differences in sex-role orientation are the result of individual differences in the cognitive structures used for coding and processing gender-related information. She argues that individuals of different sex-role orientations do not differ "primarily in terms of how much masculinity and femininity they possess" but more fundamentally in their cognitive structures for "processing gender-related information, and hence in the perceptual salience and cognitive availability of gender and gender-related concepts as dimensions for processing incoming information." (Bem, 1979, p. 1053). Individuals for whom sex roles are more salient are seen to differ in the extent to which they spontaneously process information about themselves and others in sex-role related terms. Sex-role differences "should be more readily perceived or noted, they should be more readily stored in and retrieved from memory; they should be more readily used as the basis of personality attributions and predictive inferences, they should be more readily put forth as a causal candidate for a variety of behavioral outcomes." (Bem, 1979, p. 1053). The information processing

model which predicts this selective responsiveness in individuals for whom sex roles is a salient dimension is based on the schema construct.

Schemata have been defined as cognitive structures or categories, characterized by a rich associative network, which facilitate the encoding and retrieval of information (Bartlett, 1932; Bobrow & Norman, 1975; Judd & Kulik, 1980). In their recent review of the salience literature, Taylor and Fiske (1978) have suggested that individual differences in cognitive schemata can affect what information is personally salient and therefore attended to. The amount of information impinging on a person at any given time is usually much greater than he can process; therefore, individuals must be selective in what they attend to (Markus, 1977). Schemata help a person to make sense of the flood of stimuli that bombard him (Cantor & Mischel, 1979b). They are expectations about the way the world is organized (Reeder & Brewer, 1979).

According to Martin and Halverson (1981) there has also been a recent trend to study stereotyping as an example of normal cognitive functioning. Early researchers viewed stereotypes as the result of faulty-processing and as representing a "defect in social interaction" (Vinacke, 1957, p. 229). Mischel (1970) has argued that dismissing stereotypes as mere overgeneralizations is inappropriate because it is the nature of humans to categorize events and groups into smaller units. The acknowledgment that stereotyping is similar to other types of information processing has enabled researchers to begin to explore

how stereotypes function (Martin & Halverson, 1981).

Theories of cognitive processing, particularly schema theory, may have relevance for some of the unresolved issues in the sex-role literature. Preceding such a discussion, a more detailed examination of these issues as well as a brief review of the literature relevant to schema theory will be presented.

The Persistence of Sex-Role Stereotypes

Evidence exists that children as young as two possess considerable knowledge of sex-role stereotypes (Kuhn, Nash & Brucken, 1978; Maccoby & Jacklin, 1974). In a recognition task, following stories containing both stereotypic and reversed stereotypic behaviors, Koblinsky, Cruse and Sugawara (1978) found that fifth graders showed superior recall of information consistent with sex-role stereotypes. In a study with college students, Rosenkrantz et al. (1968) found strong agreement between the sexes about differences between men and women. Freeman (1979) has reported that in college students of both sexes there was little difference between their ratings of the ideal male and the ideal female; however, he found that the typical male and the typical female were described by both sexes as very stereotypic. In the most recent review of sex-role stereotyping, Ruble (1983) has concluded that, although attitudes toward desirable characteristics for males and females have changed in the last decade, stereotypes regarding the "norm" have remained stable.

Sex-Role Consistency

Some controversy surrounds the scope of the constructs being

measured by recent sex-role orientation scales. The ability of these personality scales to predict other sex-role behaviors has been disputed. Bem (1974) assumes that individuals whose scores define them as sex-typed will exhibit stereotyped behaviors across many domains, whereas androgynous individuals will be flexible in role behaviors. This prediction rests on the assumption that diverse indicators of masculinity and femininity, such as attitudes, interests and traits, are highly correlated (Helmreich, Spence & Holahan, 1979). Bem states that the sex-typed individual is motivated to maintain cross-situational consistency in his/her behavior; whereas, she predicts that androgynous individuals will more comfortably engage in a wider range of gender related behaviors. Bem (1974) has described the BSRI as a measure of "sex-role flexibility".

In an experiment designed to test the role flexibility hypothesis, Bem and Lenney (1976) investigated the relationship between sex-role orientation and comfort in performing gender-related activities. Sex-typed subjects were found to be significantly more stereotyped in their choice of activities than either androgynous or sex-reversed subjects. This group also experienced greater discomfort when performing a cross-sex activity. Bem and Lenney (1976) concluded that these results lend support to the role flexibility hypothesis, and suggest that sex-role stereotyping restricts many "everyday" behaviors. Bem's position regarding the nature of masculinity and femininity is that they are broad, cross-situationally consistent, trait-like constructs.

In contrast, Spence and Helmreich make a distinction between masculinity and femininity as traits and broader sex-role related behaviors (Spence, Note 2). They hypothesize that, given the nature of the items included on the scales of sex-role orientation, masculine and feminine personality traits will be related to only those sex-role behaviors and preferences that are based on instrumental and expressive skills (Helmreich et al., 1979).

In a study similar to that of Bem and Lenney (1976), Helmreich et al. (1979) asked college students to rate their preference for a series of masculine, feminine, and neutral behaviors. Correlations between these ratings and the PAQ Masculinity and Femininity scores were generally low and only occasionally significant.

Questions still surround the scope of predictions that can be made from masculinity and femininity scores. The possibility that cognitive variables may be better predictors of role behavior or add to the predictive power of masculinity and femininity remains to be investigated.

Sex Roles and Psychological Adjustment

There is much conflicting evidence regarding the relationship between sex-role orientation and psychological adjustment. Traditional sex-role identity theory links good adjustment to masculinity in males and femininity in females (Mowrer, 1950; Biller, 1973). Androgyny theorists consider a balance between feminine and masculine traits to be sugggestive of psychological well-being (Bakan, 1966; Bem, 1974). Others have found masculinity to be the best predictor of adjustment in both sexes (Antill & Cunningham, 1979;

Berzins et al., 1978; Deutsch & Gilbert, 1976; Hoffman & Fidell, 1979; Jones, Chernovetz & Hansson, 1978; Silvern & Ryan, 1979). To date, only a few studies have found any relationship between psychological adjustment and femininity (Spence et al., 1975; O'Connor, Mann & Bardwick, 1978).

The nature of the relationship found between sex-role orientation and adjustment may depend greatly on the measure of psychological adjustment used. Bem (1974) argues that "greater role flexibility" is indicative of psychological adjustment. She proposes that the androgynous individual feels freer to engage in a wider range of behaviors (including those behaviors generally associated with the opposite sex) than the sex-typed individual. Studies by Bem and her colleagues (Bem & Lenney, 1976; Bem, Martyna & Watson, 1976) have generally supported this notion of greater role flexibility in androgynous subjects. The relationship between a large behavioral repertoire and traditional measures of psychological adjustment (e.g., neuroticism, anxiety, self-esteem, etc.) remains to be empirically investigated.

In the sex-role literature, adjustment has often been assessed with pencil and paper tests of self-esteem. Spence et al. (1975), Wetter (Note 3) and Bem (1977) have found, using their own sex-role measures (PAQ, PRF (Personality Research Form) ANDRO Scale and BSRI, respectively), that androgynous individuals report higher levels of self-esteem than either sex-typed or undifferentiated subjects. Following post-hoc paired comparisons of the groups, however, Wetter

(Note 3) reported that androgynous and masculine-typed subjects did not differ significantly.

O'Connor et al., (1978), in a replication of Spence et al. (1975), have found Femininity scores on the PAQ to be correlated with self-esteem among women, but not among men.

To further test the relationship of self-esteem to masculinity and femininity, Antill and Cunningham (1979) administered the BSRI, PRF ANDRO Scale, the PAQ and two self-report measures of self-esteem to male and female college students. On all sex-role tests, masculinity was found to be significantly correlated with self-esteem. Correlations with femininity scores were generally slightly negative or close to zero. Wetter (Note 3) has reported the same results using Masculinity and Femininity scores of the BSRI to predict self-esteem. There is some evidence, with respect to self-esteem, that masculine-typed individuals may be as well-adjusted as androgynous. Undifferentiated subjects, when compared with individuals of other sex-role orientations, have been found to be the least well-adjusted group (Burchardt & Serbin, 1982; Hoffman & Fidell, 1979; Orlofsky & Windle, 1978; Pyke, Note 4).

Some measures of self-esteem may actually be tapping masculine-like traits. Bem (1977) and Spence and Helmreich (1975) have both used the Texas Social Behavior Inventory (TSBI) (Helmreich, Stapp & Ervin, 1974) as a measure of self-esteem. This is a 16-item test which appears to be measuring instrumental traits as much as feelings of self-worth. Some of the items on the test are as follows: "When I am in disagreement with other people my opinion usually prevails"; " I

would describe myself as one who usually tries to master situations"; "I am not likely to speak to people until they speak to me"; "When in a group of people, I usually do what the others want rather than make suggestions". Many of the items on this test could be considered to be tapping assertion skills and social competence rather than directly measuring self-concept. Correlations between sex-typing and other measures of self-esteem, such as the Tennessee Self-Concept Scale (TSCS) (Fitts, 1965), might produce very different results. The items on this test do not generally seem to favor a masculine sex-role orientation (e.g., "I am an important person to my friends and family", "I am an attractive person", "My friends have no confidence in me"). Although this test is one of the most widely used measures of self-esteem (Robinson & Shaver, 1976), sex-role researchers have generally tended to develop their own measures (e.g., Helmreich et al. (1974) - The TSBI; Wetter (Note 3) - The Self-Esteem Questionnaire (SEQ)) or have favored other very short scales.

The influence of situational, developmental and cognitive variables on the relationship between sex-role orientation and adjustment has been seriously overlooked. In her critical analysis of the research in the area of sex roles and adjustment, Worell (Note 5) discusses the possibility that different sex-role orientations may be differentially adjustive at different stages of the life cycle. Mussen's (1961) longitudinal study of sex-typing in males gives support to this view. In adolescence, when the social milieu is likely to reinforce masculine qualities in boys, high levels of

masculinity were found to be associated with better adjustment. In adulthood, 16 years later, these same highly masculine males showed lower levels of adjustment.

Garnets (Note 6) has suggested that the relationship between sex-typing and psychological adjustment might be moderated by cognitive factors. In her dissertation, Garnets used the interaction between self-concept and two cognitive variables, same-sex ideal rating and sex-role salience (the extent to which individuals organize personality characteristics in terms of sex roles), to generate "sex-role strain" categories. A large discrepancy between same-sex ideal and real self-concept was considered to be associated with high "sex-role strain", except when sex-role salience was low. In the case of low sex-role salience, "sex-role strain" should always be low. High sex-role strain was viewed as "an intrapsychic process associated with poor psychological adjustment, specifically, low self-esteem" (Garnets & Pleck, 1979, p. 278). Garnets' "sex-role strain" analysis failed to yield the expected results. Unfortunately, the ability of sex-role salience alone to predict adjustment was not assessed.

The relationship between sex-role orientation and psychological adjustment has not been clearly established. Now that researchers (Garnets & Pleck, 1979; Lenney, 1979; Worell, Note 5) appear to be sensitive to the possible influence of situational, developmental and cognitive factors, this issue may be nearer to resolution .

Schema Theory

According to schema theory, an individual's knowledge structures, termed "schemata", "prototypes" or "categories", actively influence

his/her encoding, storage or retrieval of social information (Cohen, 1981). It is believed that a schema functions so as to make some aspects of the social environment more relevant or salient than others (Tesser, 1978).

Researchers have recently presented evidence to support the view that individuals learn and remember information by actively categorizing the input in terms of well-established schemata (Cantor & Mischel, 1977; Judd & Kulik, 1980). It has been suggested that a schema facilitates the encoding of schema-consistent information by providing a context into which it may fit (Cantor & Mischel, 1979a). For example, a person with a well-formed schema for baseball, attending a Montreal Expos game, would be able to attend to more information and to remember more details afterwards than an individual without such a schema. Results from recent studies suggest that information which activates a schema (schematic or schema-consistent) is recalled more accurately (Bower, Black & Turner, 1979; Cohen, 1981), more confidently (Cantor & Mischel, 1979a; Markus, 1977), and more quickly (shorter decision times) (Judd & Kulik, 1980; Lingle & Ostrom, 1979; Markus, 1977; Sentis & Burnstein, 1979; Smith, Adams & Schorr, 1978) than neutral information.

There is some evidence that <u>both</u> schematic and counterschematic (directly opposite from what is expected) information is processed more readily than either neutral or irrelevant information (Cohen, 1981; Judd & Kulik, 1980). It has been suggested that inconsistent (counterschematic) information may be discounted unless it is

considered to be undesirable (Reeder & Brewer, 1979) or a high level of incongruency makes it salient (Hamilton, 1979). Jones and Davis (1965) found that socially undesirable behavior performed by an actor, even if inconsistent with past behavior, may have a greater influence on impression formation than does inconsistent desirable behavior. Consistent with these findings, Spiro and Sherif (1975) have proposed that inconsistent information may be more salient because it often arouses tension.

Schemata may differ in terms of the breadth of their associative network, and therefore, in the extent of their processing power (Taylor & Winkler, Note 7). A novice chess player may have a well-formed schema for chess compared to a nonplayer, but only a rudimentary schema relative to a chessmaster. One of the determinants of individual differences in the processing of information along a given dimension is believed to be "the extent that schemata are available for encoding information..." (Martin & Halverson, 1981, p. 1126). Individuals with a highly-available schema in a particular domain have been shown to process schema-related information more efficiently than those with a lesser-developed schema (Spilich, Vesonder, Chiesi & Voss, 1979). Schemata are thought to develop through experience with similar events in the past. They may expand with exposure to relevant information; however, they are resistant to change (Markus, 1977).

Schema-like structures which influence the organization of information have been studied under several names; prototypes (Cantor & Mischel, 1977; 1979a), frames (Minsky, 1975) and scripts (Abelson,

1975). In an experiment designed to test the hypothesis that it is easier to process information about characters who fit well with preexisting beliefs about the way personality traits are organized, Cantor & Mischel (1979a) found that typing a fictitious character as a particular kind of person made it easier for subjects to later recall material that was consistent with the prototype. In an earlier study (Cantor & Mischel, 1977) they found that individuals erred in "recognizing" schema-relevant information that had not been presented. In a recognition task, nonpresented material which activates a schema may cause some uncertainty because the item may appear to be familiar. Schematic processing may influence both errors of omission or misses (failure to recognize a presented non-schematic or neutral stimulus) and commission or false alarms (mistaken recognition of a nonpresented schematic stimulus). The rejection of nonpresented schematic material has also been found to produce longer decision times than the rejection of neutral or inconsistent items (Ebbesen & Allen, 1979).

It has been suggested that the "self" functions as a cognitive structure (Mancuso & Ceely, 1980; Neisser, 1976) for organizing personal data. Markus (1977) defines self-schemata as "cognitive generalizations about the self, derived from past experience, that organize and guide processing of 'self-related information'..." (p. 64). Several recent studies have provided evidence that information compatible with an individual's self-perception is more readily processed than information that does not fit with the person's self view (Bem, 1981; Kulper & Rogers, 1979; Markus, 1977; Rogers,

Kulper & Kirker, 1977). There is also some research evidence to suggest that the dimensions one uses for evaluating others are those which are salient among the self-schemata (Lemon & Warren, 1974; Shrauger & Patterson, 1974; Spiro & Sherif, 1975).

In summary, a schema may influence the processing of information about oneself and one's social environment. Schema theory predicts that: 1) Schematic material will be processed more accurately (fewer errors) and more quickly (shorter decision time) than neutral, 2) counterschematic information (the direct opposite of what is expected) may also be processed more efficiently than neutral information, 3) in a recognition task nonpresented schematic material will be rejected with greater hesitation (longer decision time) and cause more errors of commission than neutral or counterschematic material.

Schema Theory and Stereotyping

A stereotype may be seen "as a structural framework in terms of which information about another is processed; and hence, has the properties of a schema" (Hamilton, 1979, p. 65). One of the principal characteristics of schematic information-processing is categorization and the process of categorizing others is an essential component of stereotyping. It has been suggested that schematic processing causes a perceiver to focus selectively on certain characteristics of individuals and to group these individuals under a unifying category label, and then to predict "features of any one of the category members on the basis of general expectations about the category" (Cantor & Mischel, 1979b, p. 6). Such simple cognitive categories about people simplify what would otherwise be an overwhelming amount

of information; however, reliance on stereotypes has its costs. Stereotyping not only biases the attitudes of the perceiver but may also constrain the behavior of the perceived (Cantor & Mischel, 1979b).

Cantor and Mischel (1979b) point out that once stereotypes are formed they may be held tenaciously with perceivers motivated to maintain consistency. Several studies have demonstrated that stereotypic information consistent with a particular character-type is remembered better than neutral or inconsistent information (Cantor & Mischel, 1979a; Cohen, 1981; Snyder & Uranowitz, 1978).

In a study designed to examine the effects of different levels of stereotyped attitudes on memory for stereotypic material. Liben and Signorella (1980) found that children with highly stereotyped gender-related attitudes had greater difficulty remembering pictures that violated sex-role stereotypes than pictures that were consistent with the stereotypes. In addition, researchers have found that inconsistent behaviors are easily dismissed or attributed to superficial or transient factors (Bell, Wicklund, Manko & Larkin, 1976). Evidence that is not congruent with expectations, however, cannot always be easily ignored or dismissed (Hamilton, 1979). Hamilton (1979) points out that a schema may change when the incongruency of some information actually increases its salience. Repeated exposure to such information may cause the perceiver to take an active role in re-evaluating his expectations. Ashmore and Del Boca (1979) point out that under normal conditions, individuals may be

unaware of their role in structuring their experiences. They suggest that many stereotypes are overlearned and operate without conscious control.

Schema theory may provide a more complete understanding of the cognitive processes underlying sex-role stereotyping and may also suggest a methodology for unobtrusively studying the phenomenon.

Schema Theory and Sex-Role Consistency

Schema theory may have some relevance for the explanation of cross-situational consistency. It has been proposed that some personality feature may be, in part, responsible for consistency across situations (Bem & Allen, 1974; Spence & Helmreich, 1979). Markus (1977) suggests that only when a personality characteristic is part of a well-articulated self-schema will it form a consistent pattern with an individual's judgments, decisions, and actions. Individuals who possess a well-formed self-schema on a particular dimension, will typically display consistency across situations on that dimension (Markus, 1977). For example, a man with a well-formed self-schema on the dimension of masculinity would be expected to behave in a masculine fashion in most situations. Conversely, the behavior of an individual, for whom gender was an unimportant component of his self-concept, would be highly variable across gender-related domains (e.g., traits, interests, attitudes, etc.).

In a study designed to test self-schema theory, Markus (1977), using the dimension of Independence-Dependence, found that Schematics and Aschematics processed information relevant to this dimension differently. She defined Schematics as those who rated themselves as

either Dependent or Independent on at least two out of four semantic differential scales, who rated this dimension (Independence-dependence) as important to them, and who checked themselves as "dependent" or "Independent" on an adjective checklist. Aschematics (without self-schema on this particular dimension) were those who rated themselves in the middle range on the semantic differential scales, who produced low scores on the importance scale, and checked neither "dependent" or "Independent" on the adjective checklist. Relative to Aschematics, Schematics were better able to supply specific evidence of dependent or independent behaviors they had performed in the past and assigned a significantly higher likelihood to performing these behaviors in the future. These findings suggest that individuals, whose self-schemata incorporate a particular dimension, will display greater cross-situational consistency on that dimension.

Sex-Role Schemata and Adjustment

The highly sex-typed individual is thought to be motivated to maintain a self-image consistent with an internalized sex-role standard (Bem, Note 1). This is likely to be an easier task for masculine and feminine individuals high in sex-role salience. These are individuals who possess a self-schema on the dimension of masculinity-femininity and who are influenced in their processing of information from their environment by this sex-role schema. A sex-typed individual with a well-articulated sex-role schema is more likely to be influenced by those aspects of his/her environment which

reinforce his/her view of him/herself and others. A well-developed sex-role schema will also protect him/her from much of the information that may disconfirm his/her view of the world. His/her self-image, as masculine or feminine, will be buttressed by confirming cognitions and is less likely to be threatened by conflicting information. Markus (1977) found that Schematics (Independents and Dependents) were less likely than Aschematics to accept information disconfirming their beliefs about themselves along the dimension of Independent-Dependence.

Epstein (1973) states that the organization of the self-concept must be maintained in order to preserve adequate functioning and self-esteem. If this is threatened, an individual will experience conflict and anxiety. Sex-typed men and women (those with a sex-typed self-image), who are low in sex-role salience (that is, who do not organize information along sex-role dimensions), may experience greater role-conflict since their self-image is not bolstered by a view of the world that is highly confirming. For example, feminine women, low in sex-role salience, are more likely to be influenced by information challenging the traditional roles with which they identify than are feminine women high in sex-role salience. Role-conflict has been associated with higher levels of neuroticism (Rogers, 1951). Individuals whose self-image is supported by confirming evidence and protected from conflict are likely to have a greater sense of self-esteem and lower levels of neuroticism.

The lack of a sex-role schema, as part of the self-concept, does not imply a deficiency. The self may be organized along many

dimensions. Epstein (1973), in his treatise on the self-concept, states that individuals with many self-schemata will have the ability to cope with a wide variety of situations and will be more flexible and open to new situations. Androgynous individuals who have been shown to exhibit role-flexibility (Bem & Lenney, 1976) may in many cases have developed an extensive self-theory. Undifferentiated individuals, who tend to endorse relatively few personality traits on inventories, may be examples of individuals with restricted self-schemata.

The above formulation would support the popular view of a postive relationship between androgyny and sex-role flexibility. The negative relationship between an undifferentiated sex-role orientation and adjustment can also be understood. This conceptualization also attempts to introduce an additional variable, sex-role salience, which may differentiate between sex-typed individuals with high and low self-esteem and high and low neuroticism. Although androgyny has generally been considered to be predictive of psychological well-being, many sex-typed individuals may be equally well-adjusted. The consideration of sex-role salience, a cognitive construct, may allow researchers to subdivide a large group (representing nearly half of most samples) into more meaningful categories, and thereby improve the prediction of adjustment. In her review of the androgyny literature, Lenney (1979) points out that "sometimes and for some people, sex-typing is adaptive." (p. 707).

Garnets' (Note 6) attempt to find a moderating influence of sex-

role salience on adjustment was unsuccessful. In her study, she proposed three methods of measuring sex-role salience. The first was a short questionnaire on which respondents rated the extent to which they considered 31 different activities to be related to sex roles. The second and third measures were derived from ratings on the BSRI, of ideal-self and same-sex-ideal. Unfortunately these forms of measuring sex-role salience make it difficult to separate a knowledge of societal norms and values from personal beliefs. In addition, since sex-role salience should represent the extent to which an individual automatically processes information in sex-role relevant terms, it would seem that this construct could be better measured by methods whose purpose was not obvious. Sex-role stereotypes are well known in our society and are likely to influence an individual's responses if the purpose of the task is clear. Primed to think in terms of sex roles, some individuals might respond as if it were a more salient dimension for them than it actually is. Others, reacting to the current unpopularity of categorization by gender, may attempt to disguise its salience for them. A less obvious measure of sex-role salience may be more effective in predicting adjustment.

Individual Differences in Sex-Role Schemata and Sex-Role Orientation

As Bem (1979) has suggested, cognitive schemata may function to organize sex-role related information about the self and may be implicated in the development of one's sex-role orientation. Martin and Halverson (1981) have proposed a schematic processing model of sex-typing in children. They suggest that schemata regulate behavior by providing the information necessary for engaging in schema-

consistent behavior and for setting schema-consistent goals.

Following a procedure developed by Markus (1977), both Bem (1981) and Markus, Crane, Bernstein and Siladi (1982) have investigated the extent to which sex-role serves as a schema for processing information about the self. In a dichotomous choice task ("ME" or "NOT ME"), Markus and her co-workers (1982) found that Feminine and Masculine Schematics endorsed schematic (sex-congruent) traits more quickly than counterschematic (sex-incongruent) traits. This difference was not found in Aschematic subjects. Markus defined Masculine Schematics as those who rated themselves high on three masculine adjectives (i.e., aggressive, dominant, acts as a leader) and low on three feminine adjectives (i.e., gentle, emotional, sensitive). Feminine Schematics scored in the reverse direction. Aschematics (High and Low) were those who rated themselves similarly on the two types of adjectives (high or low ratings). Although High and Low Aschematics may be seen as equivalent to androgynous and undifferentiated classifications, Markus et al. made no distinction between sex-typed and cross-sexed subjects. There were both female Masculine Schematics (1 out of 10) and male Feminine Schematics (7 out of 21).

In her study, Bem (1981) found that sex-typed subjects required shorter decision times for making schema-consistent judgments (i.e., endorsing schematic traits as self-descriptive and rejecting counterschematic traits) and longer decision times for making schema-inconsistent judgments (i.e., endorsing counterschematic traits as self-descriptive and rejecting schematic traits) than subjects of

other sex-role orientations. Pyke and Graham (1983) have pointed out that "gender schema theory" (Bem, 1981) is weakest in its explanation of the responses of cross-sexed subjects. Do they invoke a sex-role schema when processing information about themselves? Although Bem does not take a definite stand, she appears to favor the position that cross-sexed subjects do not use a gender schema when processing information. On a clustering task, she found that these subjects showed the least amount of grouping of items on the basis of gender category. On the self-schema task, Bem's results were inconclusive. Cross-sexed individuals were significantly different from androgynous and sex-typed subjects when making schema-consistent judgments; however, they were not significantly different from others when making schema-inconsistent judgments.

Although the results of the studies reported by Bem (1981) and Markus and her colleagues (1982) are generally consistent with each other, there are two issues about which the researchers disagree. The first is concerned with the breadth of the sex-role schema. Bem (1981) argues that sex-typed individuals of both sexes use a general sex-role dimension for processing information. Markus et al. (1982) provide evidence to suggest that masculine schematics possess a masculine schema and feminine schematics possess a feminine schema but that neither group possesses both schemata. Markus et al. (1982) use the fact that masculine schematics were slow to endorse feminine adjectives (and the reverse pattern for feminine schematics) as evidence that they lack a feminine, and therefore, gender (sex-role) schema. Bem (1982) argues that, according to "gender schema theory",

whether an individual will be fast or slow when endorsing an item is dependent "on whether the item is culturally defined as appropriate or inappropriate for that individual's sex."(p. 1193). She also argues that there is "nothing within gender schema theory that precludes the sex-typed individual from having more highly differentiated knowledge about the self in, say, the masculine domain than in the feminine domain." (Bem, 1982, p. 1194).

The second issue is concerned with the schematic processing of androgynous and undifferentiated subjects. Bem (1981) sees both as aschematic with respect to gender because, in her study, they showed significantly less schematic processing than sex-typed subjects. Markus et al. (1982), however, found that androgynous subjects did not differ significantly from masculine subjects in their endorsement time of masculine traits nor from feminine subjects in their endorsement time of feminine traits. This information was lost in Bem's study because of the method of combining scores into schema-consistent and schema-inconsistent categories. Markus and her co-workers suggest that androgynous subjects are schematic processors of both masculine and feminine traits in the self-concept and that only undifferentiated subjects are truly aschematic with respect to gender.

Bem (1981) suggests that a sex-typed sex-role orientation derives, in part, from gender-based schematic processing. Individual differences in sex-role salience (gender schema) within each sex-role orientation group have not been investigated. "Gender schema theory" is proposed by Bem only to explain the differences between groups; and

thereby, sex-role salience overlaps with sex-typing. Although it is likely that most sex-typed individuals possess higher levels of sex-role salience than those of other sex-role orientations, it may also be true that some sex-typed individuals do not. In addition, considering individual differences in sex-role salience, within the sex-typed group, might increase the accuracy of predictions about this group.

The Present Study

The present study proposed three methods of measuring sex-role salience and evaluated their relationship to sex-role orientation, sex-role stereotyping, sex-role interests and psychological adjustment. Sex-role salience refers to the extent to which individuals spontaneously process information about themselves and others in sex-role related terms. Multiple measures were examined since the construct, sex-role salience, has not yet been successfully operationalized.

The first task used in this study (self-schema task) examined the extent to which subjects used the dimensions of masculinity and femininity in processing self-relevant personality traits. A high level of sex-role salience as part of the self-concept was suggested by short decision times for the endorsement of sex-congruent adjectives as self-descriptive (i.e., masculine traits for males and feminine traits for females, irrespective of sex-role orientation) and by long decision times for the rejection of these traits. High levels of sex-role salience should produce the opposite pattern for sex-incongruent traits. The first hypothesis is concerned with the

performance of the sex-role orientation groups on this task.

Hypothesis 1: Sex-role orientation and sex-role schemata in the self-concept. Individuals of different sex-role orientations were hypothesized to differ in the processing of sex-role related traits. According to Bem's (1981) "gender schema theory", sex-typed individuals do not spend time when deciding if an adjective is self-descriptive by searching for behavioral evidence; but rather, they "simply 'look up' the attribute in the gender schema and answer in the affirmative if the attribute is sex-congruent..." (p. 359). Sex-typed individuals, therefore, ought to respond more quickly than nonsex-typed subjects when making schema-consistent judgments (i.e., endorsing sex-congruent adjectives as self-descriptive and rejecting sex-incongruent adjectives) and they ought to respond more slowly when making schema-inconsistent judgments (i.e., endorsing sex-incongruent adjectives as self-descriptive and rejecting sex-congruent adjectives) (Bem, 1981; Markus, 1977).

The following predictions were made:

1) Because it was hypothesized that sex-typed subjects use sex-role schemata when processing information about themselves; they were expected: a) To require shorter decision times than cross-sexed and undifferentiated subjects, for endorsing sex-congruent (schematic) personality traits, b) to require longer decision times, than subjects of other groups, for endorsing sex-incongruent (counterschematic) traits, c) to endorse schematic traits more quickly than counterschematic traits, d) to reject schematic traits more

slowly than undifferentiated and cross-sexed subjects, e) to reject counterschematic traits more quickly than subjects of other sex-role orientation groups, and f) to reject counterschematic traits more quickly than schematic traits.

2) If cross-sexed individuals also invoke a sex-role schema in the processing of self-relevant information their responses should be the mirror image of those of sex-typed subjects. They were therefore expected: a) To endorse schematic traits more slowly than other subjects, b) to endorse counterschematic traits more quickly than either sex-typed or undifferentiated subjects, c) to endorse counterschematic traits more quickly than schematic traits, d) to reject schematic traits more quickly than subjects of other groups, e) to reject counterschematic traits more slowly than sex-typed and undifferentiated subjects, and f) to reject schematic traits more quickly than counterschematic.

3) Androgynous subjects, regardless of sex, are thought to have well-articulated self-schemata for both masculinity and femininity; therefore, they were expected to process schematic traits similarly to sex-typed subjects and counterschematic traits simiarly to cross-sexed subjects.

4) Androgynous and undifferentiated subjects were expected to process both schematic and counterschematic traits equally.

The predictions concerning sex-typed and undifferentiated subjects are generally congruent with those of Bem (1981) and Markus et al. (1982); those relating to the responses of androgynous and cross-sexed subjects emphasize the aforementioned position adopted by

Markus et al. (1981).

The second and third hypotheses of this study are concerned with sex-role salience in the perception of others and are related to performance on the remaining two tasks. The second measure, a recognition task, was concerned with the use of sex role as a dimension for judging others (sex-role schema (others) task). On this task the decision times and errors in the recognition of stereotyped (schematic), reversed-stereotyped (counterschematic) and neutral stimuli (traits and activities) were analyzed. The third task measured the extent to which subjects match people and objects on the basis of sex role rather than using other dimensions.

Hypothesis 2: Sex-role schema in the perception of others. In accordance with schema theory, it was hypothesized that, in the perception of others (sex-role stereotyping), stereotyped (schematic) and counterstereotyped (counterschematic) material, presented in a description, would be processed more accurately and more quickly than neutral material. Because of the apparent familiarity of new (unpresented) schematic stimuli, they would be processed more slowly than neutral or counterschematic material. It was predicted that:

1) In the perception of others, the recognition of schematic and counterschematic material would a) produce fewer errors and b) require shorter decision times than the recognition of neutral material.

2) Unpresented schematic material would be identified as not having been previously seen with more difficulty, and therefore,

longer decision times than either unpresented neutral or counterschematic stimuli.

3) Errors of omission made on schematic material were predicted to be associated with greater uncertainty, and therefore, longer decision times (response latencies) than errors of omission on neutral material.

Hypothesis 3: Sex-typed subjects and sex-role stereotyping. It has been suggested that sex-role schemata are instrumental in the development of a sex-typed sex-role orientation (Bem, 1981; Martin & Halverson, 1981), and therefore, it was hypothesized that sex-typed individuals would display higher levels of schematic processing in the perception of others than individuals of other sex-role orientations. They were expected:

1) To make fewer errors in the recognition of schematic and counterschematic material and more errors in the recognition of neutral material than individuals of other sex-role orientations.

2) To be more overinclusive in their processing of schematic material (more false alarms).

3) To process schematic material (relative to neutral) more quickly (shorter decision times) than other individuals.

4) On the matching task, sex-typed individuals were expected to display higher levels of sex-role salience than other groups, by making more matches based on sex role.

Hypothesis 4: Sex-role salience and sex-role interests. Individuals with a well-formed schema on a particular dimension are thought to display behavioral consistency on that dimension (Markus,

1977). It was hypothesized that high level of sex-role schematic processing (sex-role salience) would be predictive of high levels of sex-role interests. It was, therefore, predicted that:

1) A measure of sex-role salience would be either significantly correlated with sex-role interest scales or add significantly to the variance accounted for by measures of sex-role orientation.

2) For males, high levels of sex-role salience were expected to be positively correlated with the degree of male-valued interests and negatively correlated with the degree of female-valued interests.

3) For females, high sex-role salience should be positively correlated with female-valued interests and negatively correlated with male-valued interests.

Hypothesis 5: Sex-role salience and psychological adjustment. Sex-typed individuals with well-developed sex-role schemata are likely to be influenced by those aspects of their environment which reinforce their view of themselves (Markus, 1977); and therefore, their self-image, as masculine or feminine, will be bolstered. In addition, a well-developed sex-role schema may protect sex-typed individuals from information which challenges the traditional roles with which they identify, and therefore, reduces the likelihood of role-conflict (Epstein 1973). In sex-typed individuals higher levels of sex-role (salience) schematic processing were hypothesized to be related to better adjustment, that is, higher self-esteem and less role conflict (neuroticism). It was predicted that:

1) Scores on measures of sex-role salience would to be

positively correlated with total self-esteem scores and neuroticism scores on the TSCS (high neuroticism scores indicate low levels of neuroticism) or would add significantly to the variance accounted for by the BSRI Masculinity score, which was also included as a predictor because it has often been shown to be positively correlated with self-esteem (e.g., Antill & Cunningham, 1979; Hoffman & Fidell, 1979).

Method

Subjects

One hundred and seventy subjects, 85 males and 85 females, were recruited from psychology classes (day and evening sections) at Concordia University in Montreal, Canada. At the time of recruitment the study was described as one investigating the relationship between an individual's own personality traits and his/her perception of others. The procedure was also briefly described. Those interested in participating provided their names and telephone numbers and were later contacted for an individual appointment. All subjects were unpaid volunteers.

Materials and Apparatus

Measures of sex-role salience. Three methods of measuring sex-role salience were examined. A response latency task (sex-role self-schema), derived from the work of Markus (1977) and modified by Bem (1981), was administered to measure the strength of a sex-role schema in an individuals' self-concept. Decision times for endorsing and rejecting schematic and counterschematic traits (both subtracted from response latencies to neutral traits) provided measures of sex-role salience.

Bem (1981) has suggested the use of a clustering technique to measure nonself-relevant sex-role schemata. Some researchers, however, have questioned the use of clustering as a measure of schematic processing (Hastie & Kumar, 1979; Judd & Kulik, 1980; Rogers, Kuiper & Kirker, 1977). An additional response latency task,

evaluating sex-role schemata in the perception of others, was developed (sex-role schema (others)) for this study. The use of a measure similar to that developed for self-relevant material makes the comparisons between tasks more meaningful. Schematic processing is suggested by fewer errors and shorter decision times (response latencies) on the recognition of schematic material compared to neutral. Sex-role salience scores are represented by the difference in response latencies to neutral and schematic stimuli (neutral minus schematic), a higher score suggesting greater salience.

The third measure, a matching test (The Personal Concept of Similarity Questionnaire), is conceptually similar to another task, developed in our laboratory for use with children (Sprafkin & Serbin, Note 8). The study of sex-role salience as a developmental process will eventually require equivalent tasks suitable for different age groups.

Sex-role self-schema task. Sixty-seven 2 X 2 slides, with one trait printed on each, were used in the administration of this response latency task. Sixty of the traits, 20 masculine (e.g., aggressive, ambitious), 20 feminine (e.g., emotional, gentle) and 20 neutral (e.g., friendly, adaptable), were taken directly from the BSRI. An additional seven neutral descriptors (student, parent, religious, political, polite, blond, only-child) preceded the BSRI adjectives to allow for familiarization with the demands of the task. With the exception of these seven slides, this task is identical to the one described by Bem (1981). Slides were projected by a Kodak

Carousel projector, model number 850H, which was modified to change the presented slide after a 2-second exposure and then to stop. Each slide was followed by a blank. The presentation of slides was controlled by the experimenter. A photocell, placed at the bottom of the screen and triggered by the light from the projection, initiated a Lafayette Reaction Timer, model number 63014. Timing was terminated by the subject pressing either of two choice keys, one labelled "ME", the other "NOT ME". Red and green lights on a custom-built control box indicated which button had been pressed. A switch on the control box operated the slide projector.

Sex-role schema (others) task. This measure consisted of a recognition task in which both responses and decision times were recorded. Eight descriptive lists of sentences, each displayed in bold letters on a transparency, were presented one at a time by a Bell and Howell overhead projector, model number 301 LT. Four of the lists described a male and four, a female.

Each list of sentences described a fictitious character. These may be found in Appendix A. Pilot testing revealed no relationship between decision time and the position of material in the descriptions; however, the lists were arranged so that the first three and last sentences of each contained demographic or other neutral data. In order to control for possible primacy and recency effects on recognition. The first three sentences gave the name, place of birth or residence, and occupation of the character. All names contained four letters and were found in common usage; gender was obvious. Occupations were sex-stereotyped (e.g., nurse (F) and engineer (M)).

The last sentence in each list described a plan for the future (e.g., "Mike plans to visit Spain." or "Mary hopes to graduate and find a job."). The last sentences all contained nonsex-stereotyped information. The remaining eight sentences in each list contained sex-stereotyped (schematic), neutral and countersex-stereotyped (counterschematic) stimuli. These were arranged in random order in each description (list). Half of these words or short phrases described personality traits, and half described activities. To ensure that characters would be perceived as masculine men and feminine women, five of these eight stimuli were stereotyped. Half of the descriptions contained three stereotyped traits and two activities and half contained three activities and two traits. Two neutral stimuli, one trait and one activity, were included in each list. Only one counterschematic stimuli, a trait or an activity, was included in each description because the inclusion of more than one piece of counterschematic material would affect its perception as an uncharacteristic item. An additional list, containing only neutral and demographic information was used as a practice trial.

The 24 masculine, 24 feminine and 24 neutral traits, used in this task, were obtained from the results of 47 independent raters (21 males and 26 females). These individuals were given a list of personality traits, taken from sex-role inventories and personality questionnaires (i.e., BSRI, PAQ, PRF ANDRO Scale, Adjective Checklist, (Heilbrun, 1976)), and asked whether each was more descriptive of males or females, or equally descriptive of both. Traits were

categorized as masculine, feminine, and neutral based on 80% agreement of both male and female judges.

Activities used in the descriptive lists were designated, as masculine, feminine, or neutral, by 61 independent judges (34 females and 27 males) in a preliminary study. These judges were asked to rate 177 activities as masculine or feminine on the basis of which sex engaged in the activity more often. An activity was rated as neutral if both sexes were judged to engage in it equally. Masculine and feminine activities were further rated as to their degree of association with that sex, on a 5-point scale, ranging from "only slightly more associated with that sex" to "almost exclusively associated with that sex". The criteria for inclusion were 80% agreement and, for masculine and feminine activities, a mean rating of at least 3.0. Only those items which met these criteria for both male and female judges were accepted. There was no significant difference among the three categories for the length of items nor was there a significant difference between the mean rating of masculine and feminine items. Twenty-four masculine, 24 feminine and 24 neutral activities were used in the preparation of materials for this study.

For the recognition task, 22 2 X 2 slides were presented following each description, each displaying one descriptor (e.g., "aggressive" or "gathers flowers"). Three slides displayed demograhic stimuli, four displayed traits and four, activities; all having been presented (seen) in the list of sentences. Eleven similar slides of equivalent, but previously unseen material were intermingled among the "seen" slides for each description. The first five and the last slide

presented contained true ("Seen") and false ("Not Seen") demographic material in random order. The subjects' responses to these slides were not included in the analyses. The remaining 16 slides displayed schematic, counterschematic and neutral stimuli (both "Seen" and "Not Seen"). The order of presentation of these slides was randomly established for each of the eight descriptions. The 22 stimuli contained on the slides following each list are also presented in Appendix A.

One hundred and twenty-eight responses and decision times (in milliseconds) were recorded for each subject using the equipment described above. Data from the practice trials were excluded. Choice keys were labelled "Seen" and "Not Seen". Preliminary testing with research assistants and graduate students demonstrated that the measuring of response latencies was not apparent to the subjects. A pilot study with undergraduates, designed to examine the effectiveness of this task at eliciting schematic processing, provided satisfactory results. Schematic stimuli were processed more quickly (response latencies) ($t(13) = 2.715$, $p < .02$, two-tailed) and more accurately (errors) ($t(13) = 1.804$, $p < .10$, two-tailed) than neutral material.

The Personal Concept of Similarity Questionnaire (PCSQ). A test was developed to measure the extent to which individuals choose sex role as a category for judging the similarity of people and objects over other equally appropriate categories. On the basis of preliminary studies, a group of items was selected to form a questionnaire. Items that were frequently left out or which produced

little or no variability among respondents were deleted from the test. Items were retained on the basis of part-whole correlations between the items and the total test score. Less than half (14) of the items in the test are true items; that is, the subject has a choice between matching on the basis of sex-role or another category (e.g., Which pair is most similar? - "Manicurist & Hairdresser OR Hairdresser & Barber"; "Perfume & After-shave lotion OR Perfume & Lipstick"). The remaining (23) are bogus items used as fillers to disguise the intent of the task (e.g., Which pair is most similar? "Spaghetti & Pizza OR Spaghetti & Chili"; Auto mechanic & Auto racer OR Auto racer & Speed-skater"). The importance of disguising the purpose of the task has already been discussed.

The sex-role salience score on this task is represented by the total number of true items that have been matched on the basis of sex-role classification. Appendix B contains a copy of the questionnaire. True items are preceded by an asterisk. Subjects require an average of 10 minutes to complete the questionnaire. During the development of the test, pilot testing with undergraduate students showed a test-retest reliability of .74 following a three-week interval.

Measure of demographic variables. The Personal History Questionnaire was designed to gather information concerning subjects' personal and family characteristics. This questionnaire has been reproduced in Appendix C.

Measure of sex-role orientation. The Bem Sex-Role Inventory (BSRI) (Bem, 1974) is the most widely used research measure of sex-

role orientation. The test contains three scales, a Masculinity, a Femininity, and a Neutral scale, each containing 20 personality characteristics. Traits included in the Masculinity scale (e.g., independent, athletic) are those which had been rated as more desirable for males in our society by both male and female judges. Feminine traits (e.g., warm, soft-spoken) had been rated as more desirable for females. Neutral items (e.g., happy, tactful) were those rated equally desirable for both sexes.

Respondents are asked to indicate, on a 7-point scale, to what extent each of 60 presented adjectives describes him/herself. On the basis of his/her responses, an individual receives a Masculinity and a Femininity score. The Masculinity score is the average of all masculine item ratings and Femininity, the average of all feminine item ratings. Neutral traits are not included in the calculation of sex-role orientation.

An individual's sex-role classification is determined by the position of his scores relative to the group median. If both scores fall above the median, an individual is classified as androgynous; if both fall below the median he/she is labelled undifferentiated. If only one score falls above the median, he/she is masculine or feminine (sex-typed or cross-sexed).

The BSRI has been found to be internally consistent (average α = .86), reliable over time (average r = .93) and uncorrelated with social desirability (average r = -.06) (Bem, 1974). A series of behavioral validation studies of the BSRI have been

reported by Bem and her co-workers (Bem, 1975; Bem & Lenney, 1976; Bem, Martyna & Watson, 1976). The findings of these studies suggest, as predicted, a behavioral flexibility in androgynous subjects.

In this study the title used on the test was "Self-Evaluation Questionnaire" in order to make its purpose less obvious.

Measure of sex-role interests. The Revised Sex Role Behavior Scale (SRBS-2) is a recently developed self-report inventory (Orlofsky, Ramsden & Cohen, 1982) designed to measure masculine and feminine interests and behaviors in four areas: Recreational and leisure activities, vocational preferences, social interaction, and marital behaviors. Unlike earlier inventories, this scale provides for the separate assessment of masculine and feminine characteristics, and is therefore, conceptually similar to many of the recently developed sex-role inventories measuring personality traits (e.g., Bem Sex-Role Inventory (Bem, 1974); Personal Attributes Questionnaire (Spence et al., 1975)).

The test provides three scale scores. Items rated as more typical of one sex than the other, but desirable for both, were included in the male-valued and female-valued scales. Items rated as more typical of one sex and desirable for that sex only, were included in the bipolar sex-specific scale.

For the purpose of this study, only the first two area subscales, assessing the appeal of recreational and leisure activities (e.g., playing chess, reading Glamour Magazine, mountain climbing) and vocations (e.g., nurse, accountant, tour guide) were administered. It is obvious that area subscales concerned with social interaction and

marital behavior are measuring sex-role related characteristics; and therefore, these subscales were not included. In addition, the hypothesis of this study is concerned specifically with interests. Orlofsky et al. (1982) report adequate internal consistency for the area subscales and support the use of each separately.

The form of the test used in this study contains 88 items and requires an average of 10 minutes to complete.

Measure of self-esteem. The Tennessee Self-Concept Scale (TSCS) (Fitts, 1965) is a measure of self-esteem. Robinson and Shaver (1976), in their critical review of such scales, recommend its use. It is a 100-item test on which respondents rate, on a 5-point scale, the degree to which sentences describe themselves. In addition to the total self-esteem score, the test contains six empirically derived scales, indicating the similarity of a subject's response profile to those of various psychiatric groups. The average time required for completion is 13 minutes.

Test-retest reliability coefficients for all subscales range from .67 to .92. Validity studies have demonstrated the ability of the TSCS to discriminate between groups, delinquents and nondelinquents, average individuals and those who are highly adjusted, and psychiatric and non-psychiatric patients (Fitts, 1965). Because of the specific hypotheses of this study, both the total self-esteem and the neuroticism subscale scores were calculated.

Procedure

To ensure confidentiality and to encourage frank responses, a

card, with a code number, was issued before testing began. This code number was used on all questionnaires instead of the subject's name. Each subject was given a short written description of the requirements of the study (Appendix D). He/she was asked to write his/her name and address on this sheet so that the specific hypotheses and the results of the could study be mailed to him/her. Subjects were tested individually in one session of approximately one and a half hours. The tasks involving the measurement of decision times were administered by the experimenter before the subject completed the questionnaires.

The decision, to present the self-schema task before the administration of the BSRI, was made to avoid pre-exposure to the stimuli and the possible differential concentration on some of the adjectives which might have influenced response latencies. Since some of the stimuli in the recognition task (sex-role schema (others) task) had also been taken from the BSRI, this task was administered first to avoid confusion arising from previous exposure to some of the words.

Sex-role schema (others) task. Subjects were seated at a table in front of a screen. Two choice keys labelled "SEEN" and "NOT SEEN" were located on the table. Subjects were instructed to place the index finger of their dominant hand on a spot between the keys. The following instructions were given:

> "You are about to see descriptions of nine fictitious characters projected here. They will be displayed, one at a time, for one minute each. Each description contains 12 sentences, each describing the character. You should read the sentences as many times as you can during the minute. When the description is turned off

> you will see a series of slides projected one at a time. Some of the slides will contain information that was taken directly from the description; some of the slides will contain words that were not in the description. Your task is to indicate if the word or phrase was present in the list of sentences by pressing the "SEEN" key, or not present, by pressing the "NOT SEEN" key. In order to qualify as a "SEEN" response a slide must contain information exactly as it was presented in the original description. Each slide will remain on the screen for 2 seconds. A new slide will not appear, however, until you have made your decision. There is no cross-over of information from one description to another. A word on a slide was either present or not in the preceding list. It would not have been presented in any other description before that one. Do you have any questions? The first description will be a practice trial. Let's try it and see if everything is clear."

Male and female descriptions were presented alternately. Following the presentation of the lists, 22 slides were projected, one at a time, for 2 seconds. Pressing one of the choice keys stopped the reaction timer, which had been initiated by the presentation of the slide. The experimenter recorded both the responses and response latencies. Subjects were not informed that decision times were being measured.

Sex-role self-schema task. Subjects were seated before two choice keys as above. The keys, in this case were labelled "ME" and "NOT ME". The following instructions were given:

> "On this task you will be asked to decide if each of a series of descriptive words is generally characteristic of you. There will be 67 slides presented one at a time. Each will display a word or short phrase. They will each be projected for 2 seconds. As soon as you decide if a word or phrase describes you, please press the appropriate key, "ME" or "NOT ME".

Another slide will not be presented until you have made your decision."

The slides were presented, one at a time, on the screen, as in the first task. The experimenter recorded both the responses and the response latencies. Subjects, as before, were unaware that latencies were being measured.

Administration of the response latency tasks required approximately 45 minutes. Following a short break, subjects were seated at a desk, upon which were placed the questionnaires. Written instructions were provided with each test. Subjects worked independently, taking approximately 40 minutes to complete all the questionnaires.

Discussions with subjects, after the testing session, provided assurance that neither the purpose of the study nor the fact that response latencies were being recorded was apparent. Subjects were not debriefed immediately in order to avoid the possibility that volunteers who remained to be tested would discover the purpose of the study.

Results

Demographic Data

Appendix E contains a summary of subjects' general characteristics, with a breakdown by sex. Means for each sex are provided for age, education, number of older and younger brothers and sisters, and age, education and occupation of parents. With the exception of the number of older brothers, of which males had a significantly greater amount, $t(168) = 2.51$, $p < .02$; there were no significant differences between the sexes. Nor did the sexes differ in the frequency distributions of civil status, place of birth, birth order, religion, or living arrangements. All tests of significance are two-tailed.

Classification of sex-role orientation was performed by means of the Bem Sex-Role Inventory using the median split technique (Bem, 1977). Table 1 displays the number of males and females falling into each of the four categories: Sex-typed, androgynous, undifferentiated and cross-sexed.

Sex-Role Salience Measures

In order to produce proportional cell frequencies and thereby produce orthogonal main effects, 10 subjects were dropped randomly for all analyses of variance. Each sex-role orientation group was therefore represented by an equal number of males and females. Sixty-six subjects were sex-typed, 34 androgynous, 34 undifferentiated and 26 were cross-sexed.

Because of the assumptions underlying analysis of variance

Table 1

Number of Males and Females from Entire Sample in Each Sex-Role Orientation Group

	Males	Females
Sex-typed	35	33
Androgynous	17	19
Undifferentiated	17	20
Cross-sexed	16	13

(normality of distribution and homogeneity of variance) the data were normalized using log transformations for latency (decision times) scores and arcsine transformations for error scores (Kirk, 1968).

Following the recommendation of Scheffé (1959), a .10 significance level was set for post hoc comparisons (Scheffé tests), unless otherwise stated. The Scheffé test is more rigorous than other procedures and will lead to fewer significant results unless a less conservative significance level is used (Ferguson, 1971; Winer, 1971).

The three distinct measures of sex-role salience used in this study showed low intercorrelations and were therefore considered separately. Table 2 displays the intercorrelational matrix of salience measures.

Self-schema task. This task yields four scores (measured in milliseconds): The mean decision time for schematic endorsements (i.e., "ME" responses to masculine traits for males and "ME" responses to feminine traits for females), the mean decision time for counterschematic endorsements (i.e., "ME" responses to feminine traits for males and "ME" responses to masculine traits for females), the mean decision time for schematic rejections (i.e., "NOT ME" responses to masculine traits for males and "NOT ME" responses to feminine traits for females), and the mean decision times for counterschematic rejections (i.e., "NOT ME" responses to feminine traits for males and "NOT ME" responses to masculine traits for females). For each subject, these scores were subtracted from his/her mean decision time for either endorsements or rejections of neutral traits in order to control for individual differences in general response latencies. A

Table 2

Intercorrelational Matrix of Sex-Role Salience Measures

	Self-Schema Latencies	Schema (others)[1] Errors	Schema (others) Latencies
1. Self-schema Latencies			
2a. Schema (others)[1] Errors	-.02		
2b. Schema (others) Latencies	.04	-.09	
3. Matching (PCSQ)	.08	-.12	.03

[1]Low scores on this measure suggest higher levels of schematic processing.

two-factor (Sex X Sex-type) MANOVA for endorsements and rejections performed on the latencies to neutral adjectives produced no significant main effects or interaction (Appendix F). Higher difference scores signify faster decisions for schematic and counterschematic traits relative to neutral. Higher scores for schematic endorsements and lower scores for schematic rejections suggest higher levels of schematic processing and, therefore, greater sex-role salience. Higher levels of schematic processing are also suggested by lower scores for counterschematic endorsements and higher scores for counterschematic rejections. Figure 1 shows the mean latency difference scores for schematic and counterschematic endorsements for females of each sex-role classification. Figure 2 shows the scores for males. Figure 3 displays the mean latency difference scores for schematic and counterschematic rejections of each sex-role orientation group (sexes combined).

Hypothesis 1: Sex-role orientation and sex-role schemata in the self-concept. In order to test the hypothesis that sex-role orientation groups would differ in the decision times for the endorsement ("ME" responses) of schematic and counterschematic traits, a three-way analysis of variance (Sex X Sex-type X Trait type), with trait type as a repeated measure, was performed. Appendix G contains the source table for this analysis. There were no significant main effects. As expected, a significant sex-type by trait type interaction was obtained, $F(3,152) = 7.79$, $p < .0001$. For the schematic traits, comparisons between groups by Scheffé tests showed that sex-typed subjects performed as hypothesized. They were

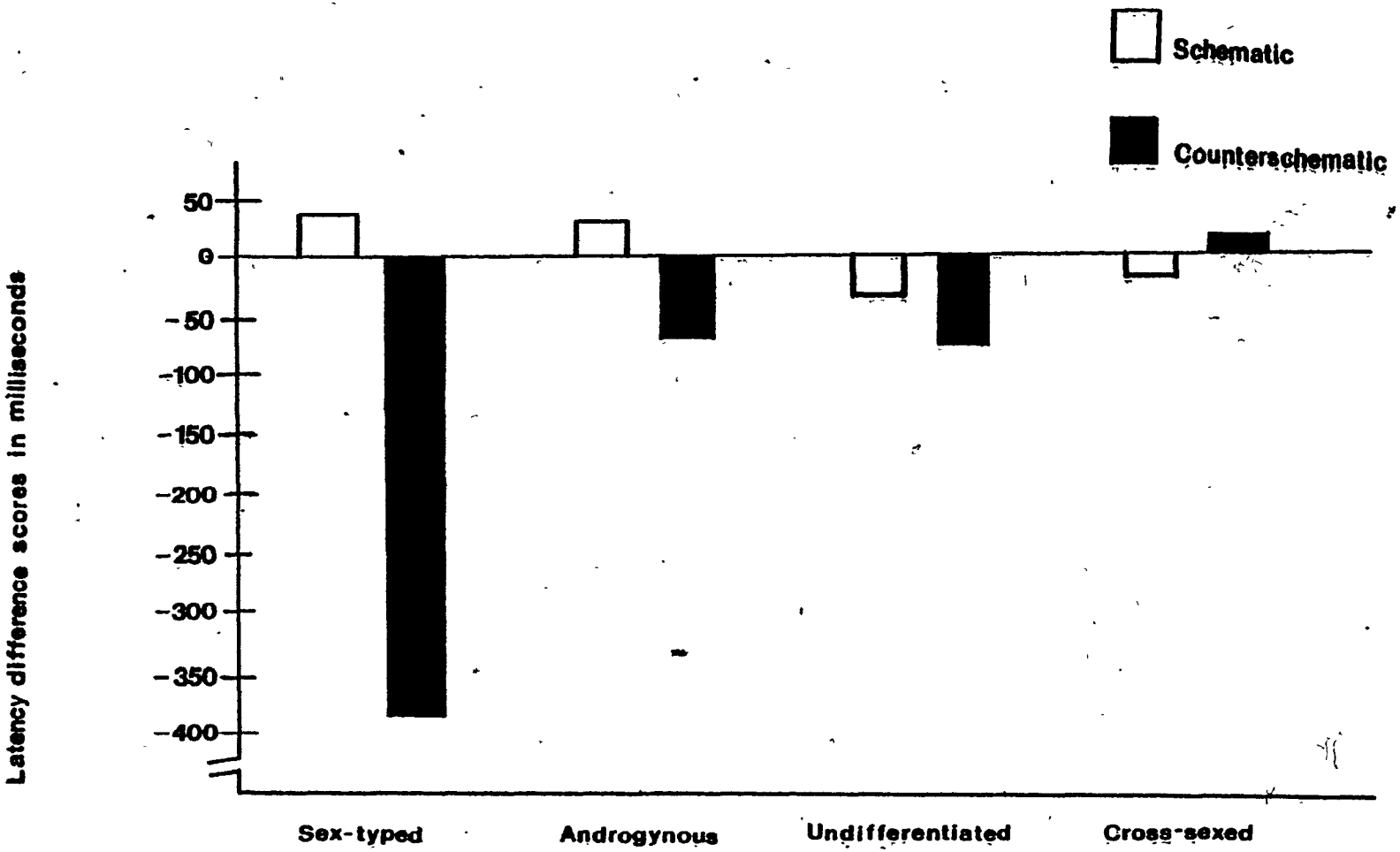

Figure 1. Females' Mean Latency Difference Scores for Schematic and Counterschematic Endorsements on the Self-Schema Task

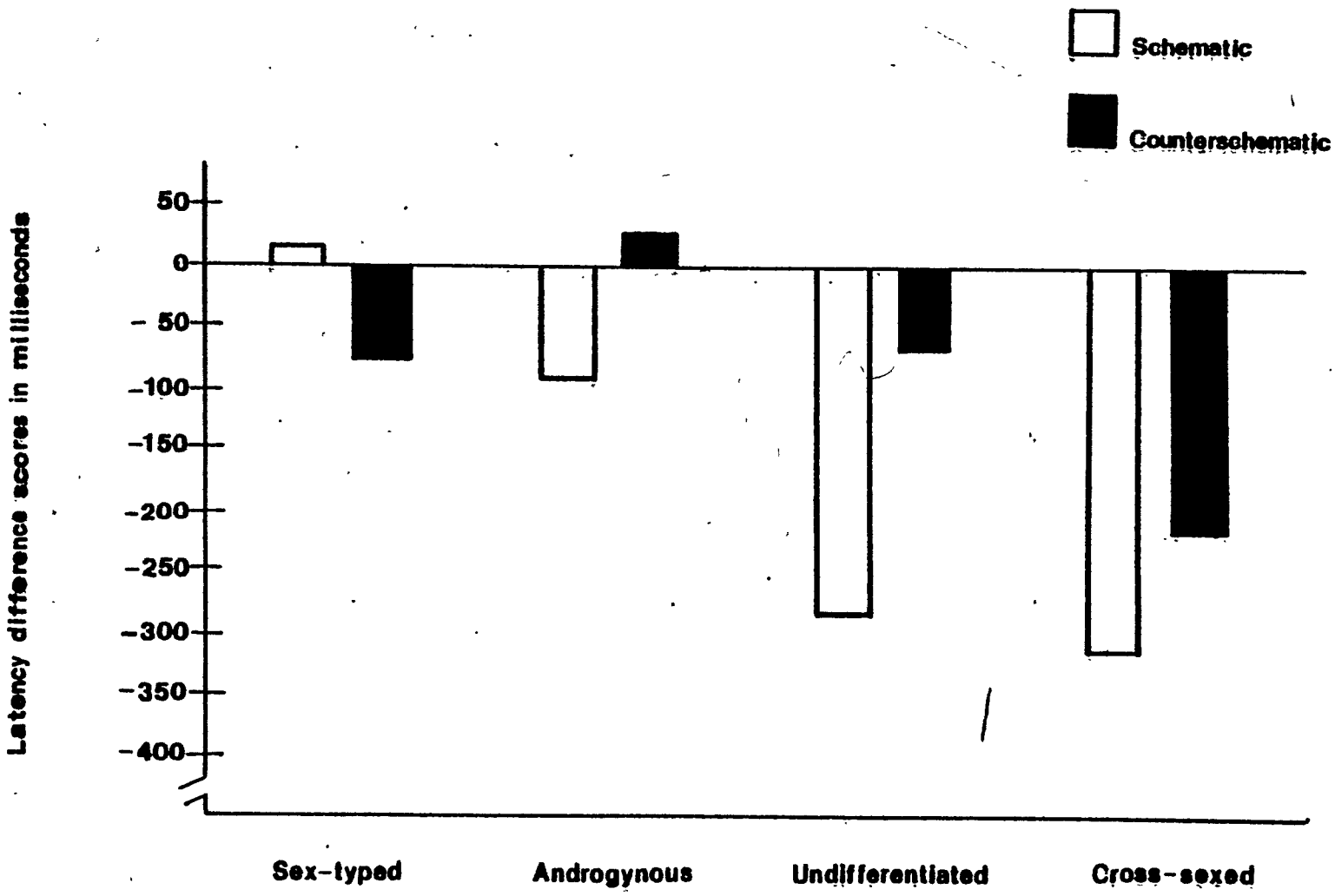

Figure 2. Males' Mean Latency Difference Scores for Schematic and Counterschematic Endorsements on the Self-Schema Task

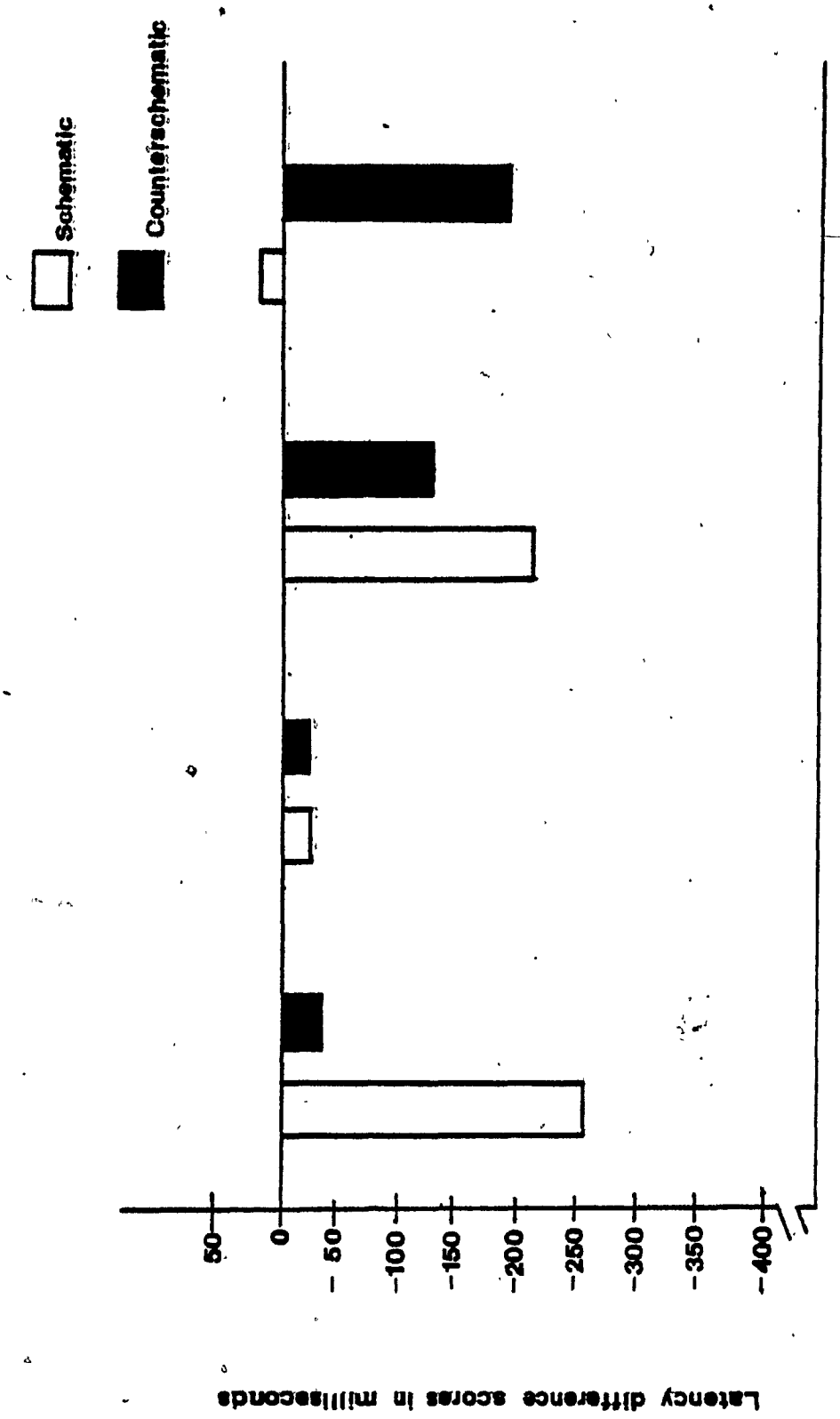

Figure 3. Mean Latency Difference Scores for Schematic and Counterschematic Rejections on the Self-Schema Task

significantly faster (M = 28) at responding "ME" to sex-congruent traits than either undifferentiated (M = -157) or cross-sexed subjects (M = -166). Also as predicted, their responses were not significantly different from androgynous subjects (M = -28). Cross-sexed subjects were expected to respond "ME" to schematic traits significantly more slowly than androgynous or undifferentiated subjects; however, this prediction failed to receive support.

For the endorsement of counterschematic traits, as expected, sex-typed subjects responded "ME" more slowly than subjects of other groups. The differences between the sex-typed group (M = -228) and other groups (androgynous (M = -21), undifferentiated (M = -69), cross-sexed (M = -100)), however, did not reach statistical significance with Scheffé tests. The prediction that cross-sexed subjects would respond "ME" to counterschematic traits more quickly than undifferentiated subjects also failed to receive support. As expected, cross-sexed and androgynous subjects did not differ significantly in their decision times for endorsing counterschematic traits.

Further analysis revealed that, as predicted, sex-typed subjects responded significantly more quickly when endorsing schematic traits than when endorsing counterschematic traits, $F(1,152) = 25.23$, $p < .001$, suggesting more well-developed schemata for sex-congruent attributes than for sex-incongruent attributes. The other sex-role orientation groups displayed no significant differences between the decision times for endorsing schematic and counterschematic traits. This finding supports the predictions for androgynous and

undifferentiated subjects, who were not expected to respond differently to the two types of traits; however, the expected pattern did not emerge for cross-sexed subjects, who failed to endorse counterschematic traits more quickly than schematic.

The predictions concerning the rejection of schematic and counterschematic traits were the reverse of those for endorsements. To test these predictions, a three-way (Sex X Sex-type X Trait type) analysis of variance, with repeated measures on trait type, was performed on decision times for the rejection of schematic and counterschematic traits. There were no statistically significant main effects or interactions. The source table may be found in Appendix H. The predictions concerning rejection decision times were therefore not supported.

Summary of results relevant to Hypothesis 1. The prediction that sex-role orientation groups would differ in their responses to schematic traits was confirmed. As expected, sex-typed subjects endorsed schematic traits significantly more quickly than undifferentiated and cross-sexed subjects, but not significantly more quickly than androgynous subjects. The endorsement decision time for counterschematic traits was longer for sex-typed subjects than for subjects of other groups; however, the differences did not reach statistical significance. As predicted, there was no significant difference between androgynous and sex-typed subjects in the endorsement of schematic traits or between androgynous and cross-sexed subjects in the endorsement of counterschematic traits. The

predictions concerning differences between sex-role orientation groups for rejection decision times were not supported.

Sex-typed subjects were found to display a high level of sex-role schematic processing (sex-role salience) in their self-concept, endorsing schematic traits more quickly than counterschematic traits. Contrary to prediction, cross-sexed subjects did not respond "ME" more quickly to counterschematic traits than to schematic traits. As expected, there were no significant differences in endorsement decision times between schematic and counterschematic traits for either androgynous or undifferentiated subjects, suggesting a self-concept equally developed (or not developed) in expressive and instrumental areas.

Sex differences in sex-role self-schemata. In the analysis of endorsement decision times, a significant interaction was also obtained between sex and trait type, $F(1,152) = 10.78$, $p < .002$. This was an unexpected finding. Finer analysis showed that females (all groups combined) responded significantly more quickly to schematic than to counterschematic traits, $F(1,152) = 11.70$, $p < .01$; however, there was no significant difference between the decision times for the two types of adjectives for males. $F(1,152) = .89$, n.s.

Females responded "ME" to schematic traits (relative to neutral) significantly more quickly than males, $F(1,152) = 5.84$, $p < .02$. The difference between the sexes for the endorsement of counterstereotyped traits approached significance, $F(1,152) = 3.86$, $p < .07$, with males showing less hesitation in accepting counterschematic traits as self-descriptive.

A significant interaction was also obtained between sex and sex-type, $F(3,152) = 3.18$, $p < .05$. There was a significant effect of sex on overall decision time (for both trait types considered together) for cross-sexed subjects only, $F(3,152) = 4.05$, $p < .05$, with males requiring significantly longer than females to make "ME" responses. Examination of the data revealed that cross-sexed males required the longest overall decision time ($M = -265$) of any group for the endorsement of traits. Figure 2 shows that, as expected, these (feminine) males required the longest decision time to endorse (masculine) schematic traits ($M = -316$); however, contrary to expectation, they were also slow to endorse counterschematic (feminine) traits ($M = -214$). Figures 1 and 2 show that, although cross-sexed males produced the longest decision times for endorsing counterschematic traits, cross-sexed females produced the shortest ($M = 13$). Therefore, only males of the cross-sexed group showed an unexpected pattern of responding.

In summary, schematic traits were endorsed more quickly than counterschematic traits by females, but not by males. In addition, females endorsed schematic traits more quickly than males; and males showed a trend to endorse counterschematic traits more quickly than females. Cross-sexed males were found to require the longest decision times for endorsing both types of traits. With respect to counterschematic traits, the opposite finding had been predicted.

Endorsement level of schematic and counterschematic traits. Because the decision time scores produced some unexpected findings,

particularly for cross-sexed males, the decision was made to examine the endorsement levels (number of "ME" responses) of schematic and counterschematic traits. In addition, it was not known if a forced choice format would produce a response pattern for the different sex-role orientation groups similar to that of the usual rating scale format.

Table 3 displays the number of schematic (sex-congruent) and counterschematic (sex-incongruent) traits endorsed ("ME" responses) by males and females of each sex-role orientation group. A two-factor (Sex X Sex-type) MANOVA was performed in order to assess the differential effects of sex and sex-role orientation on the responses to both schematic and counterschematic traits. Appendix I contains the tables of univariate F-tests and multivariate tests of significance for these data. Significant multivariate main effects of sex and sex-type and a significant sex by sex-type interaction were obtained. Post hoc comparisons (Scheffé), following significant univariate F-tests demonstrated that the sex-role orientation groups responded as would be expected from usual BSRI results. Although the decision time data revealed that cross-sexed males had displayed the greatest hesitation in the endorsement of feminine traits, this analysis showed that they endorsed significantly more feminine traits (M = 15.46) than either undifferentiated (M = 12.94) or sex-typed (M = 12.58) males.

Sex-typed and undifferentiated males endorsed a greater number of feminine adjectives than the number of masculine adjectives endorsed by their female counterparts. Although the decision time data showed

Table 3

Trait Endorsements[1] on Self-Schema Task

	Total	Males	Females
Schematic			
Sex-typed	16.00	16.15	15.85
Androgynous	16.00	16.00	16.00
Undifferentiated	12.97	12.47	13.47
Cross-sexed	11.96	10.92	13.00
Total		14.49	14.91
Counterschematic			
Sex-typed	11.11	12.58	9.64
Androgynous	14.68	14.29	15.06
Undifferentiated	11.71	12.94	10.47
Cross-sexed	15.15	15.46	14.85
Total		13.49	11.81

[1] Number of traits endorsed ("ME") out of a possible 20.

that males were less hesitant than females in their endorsement of sex-incongruent traits, the difference between the sexes only approached significance; and therefore, the results were inconclusive. The findings of this analysis lend support to the suggestion that males, in this study, included counterschematic traits in their self-concept more readily than females.

Sex-role schema (others) task. This task yields error scores and decision time scores (response latencies measured in milliseconds) for each of three types of stimuli: Schematic, counterschematic, and neutral. Response latencies for each stimulus category were calculated separately for correct and incorrect responses.

Calculation of error scores. Error of omission (misses) scores on this task were calculated in the following manner: The number of errors in each category (schematic, counterschematic, and neutral) was divided by the total number of items in that category. In regression analyses, where it was desirable to control for individual differences in the tendency to make errors (memory factor), subjects' error scores in each category were then divided by their total number of errors of omission. Errors of commission (false alarms) were calculated in the same manner; however, no analyses comparing the categories were performed on this group due to the low frequency in the neutral and counterschematic categories. Mean error scores are provided in Table 4.

Hypothesis 2: Sex-role schemata in the perception of others (sex-role schema (others) task.) In the perception of others, schematic and counterschematic (presented) material were hypothesized to be

Table 4

Mean Error Scores[1] in Each Category on Sex-Role Schema (others) Task

	Schematic	Neutral	Counterschematic
Omission	.07	.13	.09
Commission	.09	.00	.00

[1]Number of errors divided by the number of items in a category

recognized more quickly than neutral stimuli. In order to test this hypothesis, a one-way analysis of variance with repeated measures on stimulus category was performed. The analysis of variance source table may be found in Appendix J. A significant effect of stimulus category was found, $F(2,318) = 24.79$, $p < .0001$. As expected, comparisons between categories by Scheffé tests ($p < .01$) revealed that schematic and counterschematic material were both recognized significantly more quickly than neutral material. Although no predictions were made concerning differences between schematic and counterschematic traits, it is of interest that schematic stimuli were also processed significantly more quickly ($p < .05$) than counterschematic stimuli.

The identification of new (unpresented) schematic stimuli (as having been "NOT SEEN") was predicted to be associated with longer decision times than the identification of either new neutral or new counterschematic stimuli, which were not expected to differ from each other. Analysis of variance performed on latencies to stimuli which were not presented in the descriptions (i.e., "NOT SEEN" was the correct response) also obtained a significant effect of stimulus category, $F(2,318) = 55.05$, $p < .0001$ (Appendix K). Tests by Scheffé method ($p < .01$) showed that, as predicted, the identification of unpresented schematic stimuli was associated with significantly longer latencies than either the identification of unpresented neutral or counterschematic stimuli. Also, as predicted, a comparison between neutral and counterschematic stimuli revealed no significant difference. Figure 4 displays mean decision times for the recognition

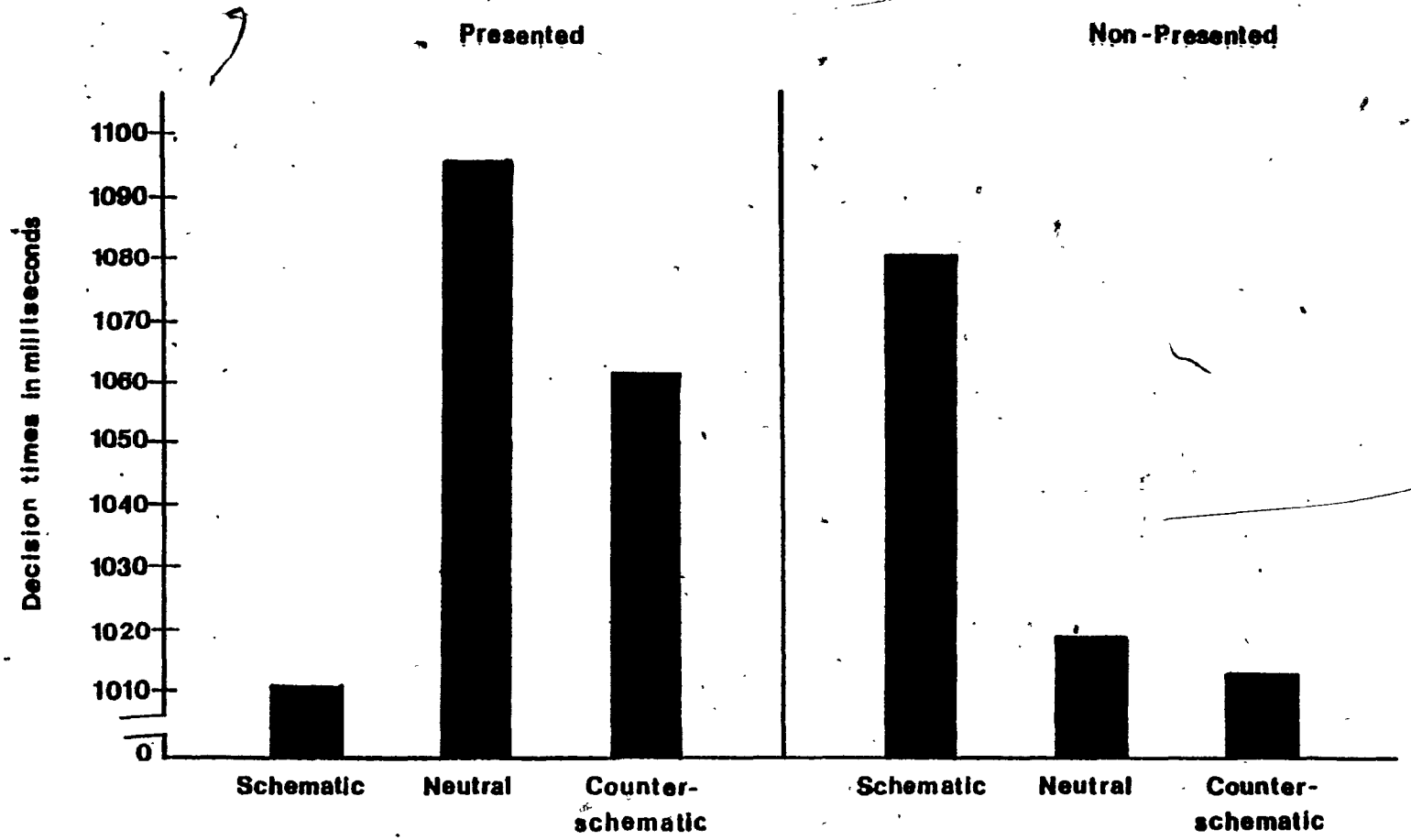

Figure 4. Mean Decision Times for Each Stimulus Type (Presented and Nonpresented Material) on the Sex-Role Schema (others) Task.

of each stimulus type.

The hypothesis that the recognition of schematic and counterschematic stimuli would produce fewer errors than the recognition of neutral stimuli was tested by a three-way analysis of variance (Sex X Sex-type X Error type), with repeated measures on the third factor. The source table for this analysis may be found in Appendix L. A significant main effect of error type, $F(2,304) = 12.78$, $p < .0001$, and a significant interaction between sex and error type $F(2,304) = 4.78$, $p < .01$ were obtained. There were significant differences among the three types of errors for both males, $F(2,304) = 6.92$, $p < .01$; and females, $F(2,304) = 17.75$, $p < .001$. Comparisons between error types for each sex using Scheffé tests revealed that, as predicted, error scores on neutral material were significantly greater than either schematic or counterschematic error scores, which did not differ significantly from each other. This was the case for both males and females.

A significant sex-type by error type interaction, $F(6,304) = 2.29$, $p < .05$ was also obtained. Table 5 shows the error scores of each type for males and females of each sex-role orientation group. Significant differences among the error types were found in the predicted direction for sex-typed, $F(2,304) = 17.51$, $p < .001$, undifferentiated subjects, $F(2,304) = 4.82$, $p < .05$, and cross-sexed subjects, $F(2,304) = 4.31$, $p < .05$. Scheffé tests showed schematic and counterschematic errors to be significantly fewer than neutral errors for sex-typed and undifferentiated subjects.

The prediction that errors on schematic and counterschematic

Table 5

Mean Error Scores (Omission) in Each Error Category for Males and Females of Each Sex-Role Orientation Group

		Schematic	Neutral	Counter-Schematic
Sex-typed	Total	.08	.15	.08
	Males	.08	.16	.11
	Females	.07	.13	.05
Androgynous	Total	.08	.13	.14
	Males	.10	.17	.19
	Females	.06	.08	.09
Undifferentiated	Total	.07	.13	.10
	Males	.09	.12	.14
	Females	.06	.13	.07
Cross-sexed	Total	.07	.10	.07
	Males	.08	.11	.08
	Females	.07	.09	.06

material would be fewer than neutral errors was supported. The pattern of error scores was similar for all subjects with the exception of the androgynous group.

It was predicted that making errors on schematic material would be associated with more uncertainty and, therefore, longer latencies than neutral errors. A pairwise t-test of neutral and schematic latencies was performed for those subjects who made both types of errors. As expected, errors in the schematic category were found to be associated with significantly longer decision times, $t(124) = 3.11$, $p < .002$.

Summary of results relevant to Hypothesis 2. The findings of this section of the study suggest that schematic processing has been elicited by the sex-role schema (others) task. The predictions derived from schema theory concerning the overall performance of subjects were supported; that is, schematic and counterschematic stimuli were processed more accurately and more quickly than neutral stimuli. In addition, unpresented schematic stimuli were correctly identified more slowly than new counterschematic or neutral stimuli; and errors of omission on schematic material were associated with greater hesitation than were errors of omission on neutral material.

Hypothesis 3: Sex-role orientation and sex-role schemata in the perception of others (sex-role schema (others) task). Because sex-role schemata are thought to be implicated in the development of sex-role orientation, sex-typed subjects were hypothesized to show higher levels of sex-role schematic processing in the perception of others. They were expected to make fewer errors of omission in the recognition of schematic and counterschematic stimuli and more errors in the

recognition of neutral stimuli than subjects of other sex-role orientation groups. Sex-typed subjects were also predicted to make more errors of commission on schematic material and to display faster decision times for the recognition of schematic material (relative to neutral) than other subjects.

For the analysis of error of omission scores, the above-mentioned three-way analysis of variance (Sex X Sex-type X Error type) revealed no significant main effect of sex-type, $F(3,304) = 1.03$, n.s.; however, as previously stated, a significant sex-type by error type interaction ($F(6,304) = 2.29$, $p < .05$) was obtained. Although the pattern of errors of sex-typed subjects on neutral and counterschematic material was in the predicted direction, comparisons between groups by Scheffé tests produced no statistically significant differences.

To test the hypothesis that sex-typed subjects would produce a greater number of false alarms than subjects of other groups, a two-way analysis of variance (Sex X Sex-type) was performed. Table 6 contains the mean schematic errors of commission (false alarms) scores for males and females of each sex-role orientation group. The source table for this analysis can be found in Appendix M. There was no main effect of sex; however, a significant main effect of sex-type was found, $F(3,152) = 3.27$, $p < .02$. In addition, there was a significant sex by sex-type interaction, $F(3,152) = 3.69$, $p < .01$. More detailed analysis showed a significant effect of sex-type, $F(3,152) = 2.77$, $p < .05$, for females only. Scheffé tests revealed

Table 6

Mean Schematic Error of Commission Scores[1] (False Alarms) for Males and Females of Each Sex-Role Orientation Group

	Males	Females
Sex-typed	.02	.01
Androgynous	.02	.04
Undifferentiated	.04	.03
Cross-sexed	.03	.02

[1] Proportion of errors in schematic "NOT SEEN" category.

that androgynous females (M = .04) made significantly more false alarm errors than sex-typed (M = .01) or cross-sexed (M = .02) females. There were no other significant findings. The hypothesis that sex-typed subjects would produce the greatest number of false alarms was not supported. Contrary to prediction, sex-typed subjects produced the fewest schematic errors of commission.

For the decision time data, level of schematic processing was represented by the difference between mean latencies to recognize presented neutral items and mean latencies to recognize presented schematic items. An analysis of variance conducted on decision times for neutral stimuli alone had revealed no significant main effect of sex, $F(1,152) = 2.55$, n.s., or sex-type, $F(3,152) = .39$, n.s., or an interaction, $F(3,152) = .77$, n.s. Higher difference scores suggest higher levels of schematic processing in the perception of others. Scores for males and females of each sex-role orientation can be found in Table 7.

In order to test the prediction that sex-typed subjects would recognize schematic stimuli more quickly than subjects of other groups, a two-way analysis of variance (Sex X Sex-type) was performed on the latency difference scores (Appendix N). There were no main effects; however, a significant sex by sex-type interaction, $F(3,152) = 4.71$, $p < .005$, was obtained. The effect of sex-type was significant for males only, $F(3,152) = 5.95$, $p < .001$. Sex-typed males produced the highest difference scores (schematic processing) (M = 137), and this score was found to be significantly different from cross-sexed males (M = -12) using the Scheffé method. There were no

Table 7

Mean Latency Difference Scores[1] in Milliseconds on Sex-Role Schema (others) Task for Males and Females of Each Sex-Role Orientation Group

	Males	Females
Sex-typed	137	86
Androgynous	52	54
Undifferentiated	87	60
Cross-sexed	-12	146

[1]Mean latency to neutral minus mean latency to schematic stimuli

other significant differences for males. It is noteworthy that, although differences between groups were not significant for females, cross-sexed females (M = 146) recognized schematic material more quickly than all other subjects. The results indicate higher levels of schematic processing in masculine subjects of both sexes. The hypothesis is therefore partially supported for males only.

Summary of results on sex-role schema (others) task relevant to Hypothesis 3. Sex-typed subjects were expected to demonstrate higher levels of schematic processing (sex-role salience) in the perception of others than subjects of other sex-role orientation groups. Sex-role salience, measured by response latencies to stereotyped material in the recognition task, was higher in sex-typed subjects for males only. For errors of omission, sex-typed subjects showed the expected pattern for neutral and counterschematic stimuli, however, differences between groups were not statistically significant. Contrary to prediction, errors of commission, were less numerous for sex-typed subjects than for other groups. Therefore, predictions related to the differential responses of sex-typed subjects were partially supported.

Sex differences in schematic processing in the perception of others. Although the sexes had not been expected to differ in sex-role stereotyping (schematic processing), the analysis of variance (Sex X Sex-type X Error type) for error of omission scores produced a significant main effect of sex. $F(1,152) = 10.43$, $p < .005$; and a significant sex by error type interaction, $F(2,304) = 4.76$, $p < .01$. Tests of simple main effects revealed difference between the sexes for neutral $F(1,304) = 4.09$, $p < .05$ and counterschematic error scores,

$F(1,304) = 21.70$, $p < .001$, with females making significantly fewer errors. Although the pattern was the same for schematic errors, the difference between the sexes was not significant, $F(1,304) = 1.27$, n.s. For decision times (Table 7), analysis relevant to the sex by sex-type interaction showed that there was a significant difference between the sexes for cross-sexed subjects only, $F(1,152) = 11.17$, $p < .001$, with females displaying more well-developed sex-role schemata in the perception of others.

Further exploratory analyses were performed to determine whether there were any differences between the sexes for the number of schematic errors from masculine descriptions and from feminine descriptions. The analysis of variance source table is displayed in Appendix O. The main effect of sex was not significant; however, a significant interaction between type of description and sex was obtained $F(1,158) = 13.55$, $p < .0005$. Further analysis showed a significant difference between males and females for errors from feminine descriptions, $F(1,158) = 11.19$, $p < .001$, with females making fewer such errors. There was also a significant difference for males, $F(1,158) = 6.78$, $p < .05$, and for females, $F(1,158) = 6.77$, $p < .05$, between the frequency of the two types of errors. Males made fewer schematic errors on descriptions of males; and females made fewer schematic errors on descriptions of females, suggesting that each sex processes stereotypic information about itself more accurately than stereotypic information about the opposite sex.

Further analysis of decision time data was also undertaken in

order to determine whether both sexes responded schematically to descriptions of both males and females. Table 8 contains the mean response latency scores of males and females for neutral and schematic stimuli taken from descriptions of both male and female characters. Difference scores and results of Hotellings T^2 tests and univariate t-tests are also displayed. Pairwise comparisons indicate that both sexes process schematic material more rapidly than neutral in both types of descriptions. A two-way (Sex X Description type) analysis of variance (Appendix P), with description type as a repeated measure, was performed on the latency difference scores for each description type in order to test whether there was a significant difference between the sexes on schematic processing of male and female characters. There was no main effect or interaction. The sexes did not differ significantly in the processing of information from male or female characters.

The Personal Concept of Similarity Questionnaire (PCSQ). The total score on this questionnaire ranged from 0 to 13 (out of a possible 14), with an overall group mean score of 6.62. Corrected item-total correlations were all significant, with the exception of item 36 (i.e., Which pair is more similar? - Father & Mother OR Mother & Daughter). Alpha coefficients calculated for the whole test (α = .69) and the test with item 36 deleted (α = .72) show adequate internal consistency among items, indicating that subjects were not responding randomly.

Hypothesis 3: Sex-typing and schematic processing of nonself-relevant material (PCSQ). The prediction, that sex-typed subjects

Table 8

Mean Decision Times[1] of Males and Females
to Neutral and Schematic Stimuli
in Descriptions of Males and Females
on the Sex-Role Schema (others) Task

	Neutral	Schematic	Difference	T Value
Male Subjects				
Male Description	1105	1028	77	4.29**
Female Description	1151	1057	94	3.79**

T^2 (2,78) = 31.97, $p < .0001$

Female Subjects				
Male Description	1037	982	55	3.58*
Female Description	1086	974	112	6.28**

T^2 (2,78) = 20.02, $p < .0001$

*$p < .002$

**$p < .001$

[1]Expressed in milliseconds

would make more matches on the PCSQ based on sex-role than subjects of other groups, was tested by a two-way (Sex X Sex-type) analysis of variance performed on total scores (Appendix Q). Although sex-typed subjects averaged the highest score on this test (Table 9), the differences between groups were small and the analysis of variance revealed no significant main effects or interaction.

The Relationship of Sex-Role Orientation and Sex-Role Salience to Sex-Role Interests

During the development of the original Sex Role Behavior Scale (SRBS-1) Orlofsky (1981) found that sex accounted for most of the variance on each of the three scales: male-valued, female-valued and bipolar interests. The effect of sex-role orientation was significant for the female-valued scale only. These results were obtained from the combined scores of all four area subscales: recreational activities, occupational interests, social and dating behavior and marital behavior. The data from the combined scores of the two area subscales used in this study (recreational and occupational) were expected to produce results consistent with this pattern. Table 10 contains the mean scores on each interest scale for males and females of each sex-role orientation group.

In order to examine the different response patterns of the sexes and the sex-role orientation groups, a two-factor MANOVA (Sex X Sex-type) was performed with the three scales of the Sex Role Behavior Scale-Revised (SRBS-2) as dependent measures. A significant multivariate main effect of sex, $F(3,150) = 74.64$, $p < .0001$, as well as a significant interaction between sex and sex-type,

Table 9

Mean Total Score[1] on The Personal Concept of Similarity Questionnaire for Each Sex-Role Orientation Group

Sex-typed	Androgynous	Undifferentiated	Cross-sexed
7.15	6.44	6.35	6.19

[1] Number of items (out of 14) matched on the basis of sex role

Table 10

Mean Scores[1] of Males and Females of Each Sex-Role Orientation Group on the Sex-Role Interest Scales of the SRBS-2

	Males			Females		
	Male-Valued	Female-Valued	Bipolar	Male-Valued	Female-Valued	Bipolar
Sex-typed	2.96	2.40	3.28	2.57	3.08	2.48
Androgynous	2.96	2.68	3.27	2.76	2.94	2.68
Undifferentiated	2.76	2.62	3.20	2.56	2.75	2.58
Cross-sexed	2.61	2.66	3.12	2.63	2.77	2.64

[1]Score range is 1 to 5.

$F(9,456) = 2.70$, $p < .01$, were obtained. The main effect of sex-type was not significant, $F(9,456) = .774$, n.s. Appendix R outlines univariate and multivariate tests of significance for this analysis. For the bipolar sex-specific scale, a significant univariate effect of sex emerged, $F(1,152) = 244.41$, $p < .0001$, with males and females scoring in the expected directions. Univariate analysis of the male-valued scale (masculine interests) also revealed an expected effect of sex, $F(1,152) = 8.20$, $p < .005$; with males scoring higher. There was no effect of sex-type or an interaction between the factors for either scale. For the female-valued scale (feminine interests), univariate F-tests revealed a significant main effect of sex, $F(1,152) = 29.27$, $p < .0001$, and a significant interaction between sex and sex-type, $F(3,152) = 3.75$, $p < .02$. Finer analysis revealed a significant difference between the sexes for sex-typed subjects only $F(1,152) = 33.63$, $p < .0001$, with females scoring higher.

This analysis showed that sex accounted for most of the variance on each of the interest scales. For female-valued interests, the sex-difference reached significance for sex-typed subjects only.

Hypothesis 4: The prediction of sex-role interests. In order to test the hypothesis that sex-role interests could be predicted from measures of sex-role salience, the three scales (male-valued, female-valued and bipolar) of the SRBS-2 were regressed in separate analyses on measures of sex-role salience and sex-role orientation. Of particular interest was the predictive power of salience measures relative to sex-typing measures; and therefore, stepwise solutions were selected. Masculinity and Femininity scores on the BSRI served

as two of the predictor variables. Sex-role salience measures were: 1) The total score on the matching task (PCSQ), 2) a score representing the difference between decision times for the endorsement of neutral and schematic traits (self-schema task), 3) the proportion of schematic error scores to overall error of omission scores (sex-role schema (others) task) (a low score represents higher schematic processing) and 4) a score representing the difference between latencies for recognizing schematic and neutral items (sex-role schema (others) task). Due to the strong relationship between sex and sex-role interests, analyses were conducted separately for males and females. In addition, sex-role salience would be expected to influence sex-role interests, of males and females, in the opposite manner. For example, high levels of sex-role salience might be associated with high scores on the masculine scale for males and with low scores on that scale for females. Summary table of these multiple regression analyses can be found in Appendix S.

For males, significant F values were obtained at the first three steps of the regression analysis of male-valued interests. The Masculinity score on the BSRI entered the equation first, $F(1,83) = 9.38$, $p < .005$, followed by latency difference score on schema (others) task $F(2,82) = 4.92$, $p < .01$, and matching task score, $F(3,81) = 3.29$, $p < .03$. None of the predictors added significantly to the variance accounted for by the Masculinity score. The femininity score did not enter the equation. A similar pattern emerged for the female-valued interests scale with the BSRI Femininity score entering

the equation first, $F(1,83) = 5.06$, $p < .05$. the remaining steps failed to yield significant results. For the bipolar scale of interests, a significant F was obtained only at the first step, $F(1,83) = 5.18$, $p < .05$, with the Femininity score again being the only statistically significant predictor.

For females, the linear combination of predictors was significantly related to the female-valued interests scale, $R = .45$, $F(6,78) = 3.27$ $p < .01$. Scores on the BSRI Femininity, $r = .36$ $p < .001$, and Masculinity scales, $r = -.26$; $p < .05$ (significance of added variance) entered the equation first. None of the other predictors added significantly to the equation. The overall regression analysis for bipolar interests was also significant for females, $R = .47$, $F(6,78) = 3.65$. $p < .005$. Masculinity score entered the equation first, $r = .43$, $p < .01$. None of the remaining predictors added significantly to the variance accounted for by Masculinity. The overall regression equation for the male-valued interests scale failed to reach significance, $R = .22$, $F(6,78) = .64$, n.s., and there were no significant predictors.

Results of regression analyses indicate that measures of sex-role salience, considered either in combination or separately, are not significantly predictive of sex-role interests. Although levels of masculinity and femininity are significantly correlated with sex-role interests, analysis of variance revealed that sex accounts for the greatest amount of variability among individuals on these scales.

The Relationship of Sex-Role Orientation and Sex-Role Salience to Adjustment

Figure 5 displays the total self-esteem score for each sex-role orientation group. To examine the relationship among sex, sex-typing and self-esteem, a two-way analysis of variance (Sex x Sex-type) was performed. The analysis of variance source table for this analysis can be found in Appendix T. There was no difference between the sexes on level of self-esteem, $F(1,152) = .622$, n.s.; however, a main effect of sex-type was obtained, $F(3,152) = 3.04$, $p < .05$. There was no significant interaction, $F(3,152) = .682$, n.s. Comparisons between groups using Scheffé tests found significant differences between undifferentiated ($M = 337.38$) and androgynous ($M = 357.26$) subjects and between undifferentiated and sex-typed ($M = 351.15$) subjects, with undifferentiated subjects showing the lowest level of self-esteem. No other differences between groups were obtained. The results of this analysis support the often reported finding that undifferentiated subjects are psychologically the most disadvantaged sex-role group (Burchardt & Serbin, 1982; Hoffman & Fidell, 1979; Orlofsky & Windle, 1978; Pyke, Note 4). Contrary to the results of many recent studies (Bem, 1977; Spence et al., 1975) the self-esteem of sex-typed subjects, in this study, was not significantly lower than that of androgynous subjects.

Hypothesis 5: The prediction of adjustment in sex-typed subjects. To test the hypothesis that for sex-typed subjects measures of sex-role salience would be predictive of adjustment, multiple regression analyses were performed for total self-esteem score and neuroticism

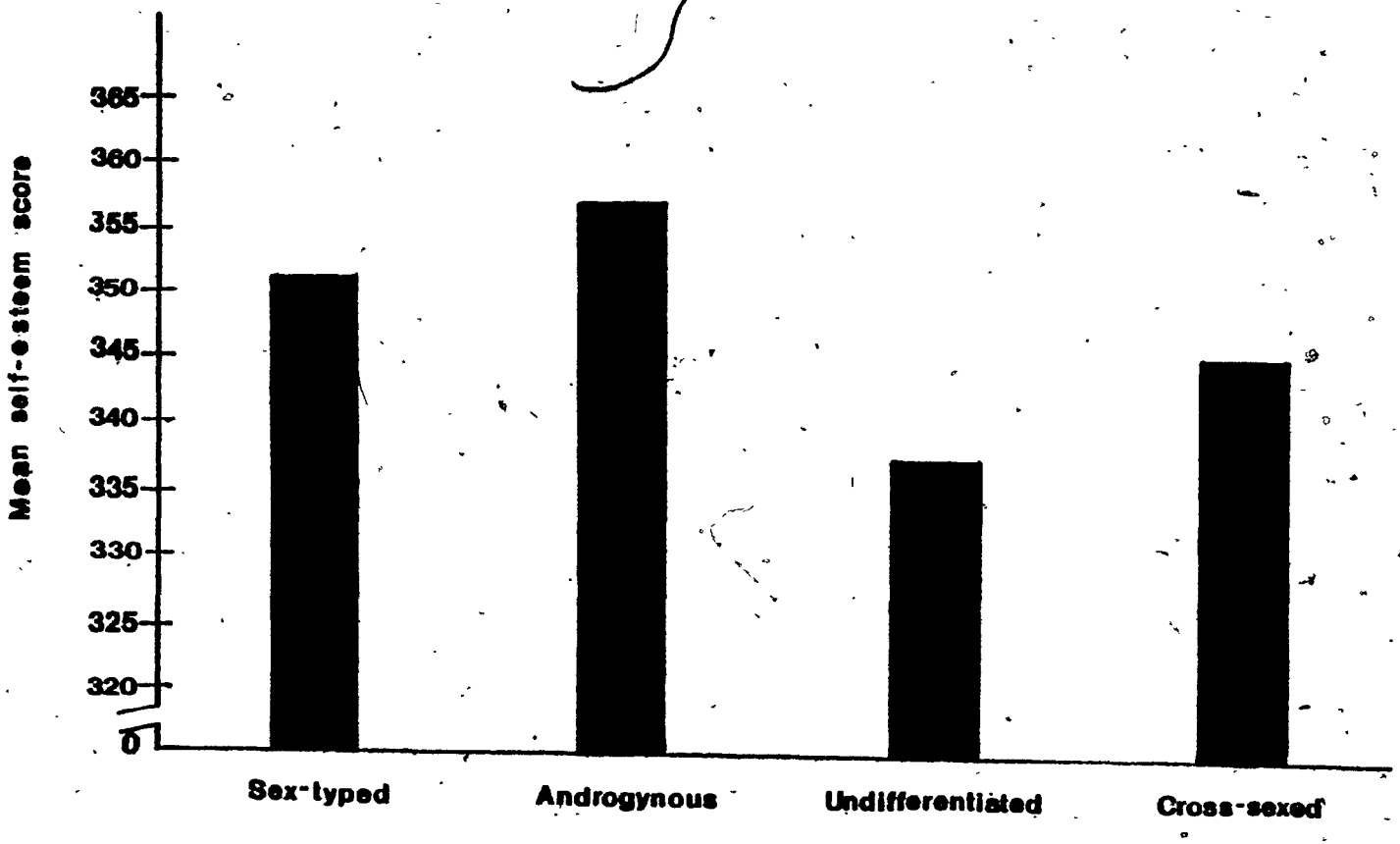

Figure 5. Mean Total Self-Esteem Scores (TSCS) for Each Sex-Role Orientation Group

score. A higher score on both of these measures suggests better adjustment. Because high Masculinity scores on the BSRI have often been found to be predictive of higher levels of self-esteem (Antill & Cunningham, 1979; Hoffman & Fidell, 1979; Silvern & Ryan, 1979), this score was included in the analyses as one of the predictors. The contribution of salience measures relative to this sex-role measure was of interest and, therefore, stepwise solutions were chosen. Femininity score on the BSRI was not included because it has not been found to be a good predictor of self-esteem, even in females. To ensure that this sample of females, who scored high on Femininity, would not display a different pattern with this particular measure of self-esteem, correlation coefficients were calculated between BSRI Femininity score and total self-esteem and neuroticism scores. As expected, these correlations were low and nonsignificant (r = -.09 and r = .08). In addition to the Masculinity score, one measure from each sex-role salience task was included as a predictor variable. The salience measures were: 1) The total score on the matching task, 2) a score representing the difference between decision times for the endorsement of neutral and schematic traits (self-schema task), and 3) a score representing the proportion of schematic errors to all errors of omission (sex-role schema (others) task). Because of the interaction between sex and the Masculinity score, and the different implications of masculinity for males and females, analyses were run separately for sex-typed males and sex-typed females. Appendix U displays summary tables of multiple regression analyses for adjustment measures.

For sex-typed males, the results of the multiple regression of total self-esteem score produced significant results at each of the first three steps. At Step 1, Masculinity score entered the equation, $F(1,33) = 5.99$, $p < .02$. The second variable to enter was latency difference score (from the self-schema task), $F(2,32) = 4.79$. $p < .02$, adding marginally to the variance accounted for by Masculinity, $p < .08$ (significance of added variance). At the third step, the total matching score entered, $F(3,31) = 3.44$, $p < .05$; however, it did not add significantly to the equation. The variable representing self-schema latency scores failed to enter the equation. The linear combination of predictors was significantly related to the neuroticism score, for sex-typed males, $R = .57$, $F(5,29) = 2.83$, $p < .05$. Once again the masculinity score was the best predictor $r = .47$, $p < .005$, followed by schematic error score, $r = -.35$, $p < .07$ (significance of added variance).

For sex-typed females, the results of the regression analysis for total self-esteem score showed that the multiple correlation coefficient never attained significance, $R = .31$, $F(5,27) = .57$, n.s. The multiple regression analysis for neuroticism score obtained significant Fs at the second through fourth steps. The BSRI Masculinity score entered first; however, the equation was not significant at step 1, $F(1,31) = 3.16$, $p < .09$. At Step 2, schematic error score entered. $F(2,30) = 4.12$. $p < .05$, adding significantly to the variance accounted for by the Masculinity score. Total matching score and schema (others) latency score entered at Step 3,

$F(3,29) = 3.59$, $p < .05$, and Step 4, $F(4,28) = 3.07$, $p < .05$, respectively; however, these variables did not add significantly to the equation. It should be noted that a low score on masculinity was predictive of better adjustment in sex-typed females.

The results of the multiple regression procedures suggest that for sex-typed males a high masculinity score is most predictive of adjustment. Measures of sex-role salience did not add significantly to this level of prediction, although the measure of schematic errors was significantly predictive ($r = -.35$, $p < .05$) on its own. Contrary to expectation, masculinity in sex-typed females was negatively correlated with adjustment. The addition of a salience measure, schematic error rate, improved the predictability of neuroticism significantly.

Summary of results relevant to Hypotheses 4 and 5. Hypotheses concerning the predictive power of salience measures employed in this study were partially supported. Proportion of schematic errors on the sex-role schema (others) task was significantly predictive of neuroticism in sex-typed males; however, the significance of added variance, after the Masculinity score was considered, only approached significance. For females, the same salience measure improved the prediction of neuroticism significantly over the Masculinity score alone. The remaining salience measures were not significantly correlated with either adjustment score. Sex-role salience, as measured in this study, was found to be unrelated to sex-role interests.

Discussion

The purpose of the present study was to evaluate three measures of sex-role salience and their relationship to sex-role orientation, sex-role stereotyping, sex-role interests and psychological adjustment. Evaluation of the first measure (self-schema task) constituted a replication of the work of Bem (1981) and the results from this part of the study were generally consistent with hers. Many of the hypotheses relevant to the second task (sex-role schema (others) task) were also supported; however, all of those relating to the third measure (PCSQ) were disconfirmed. Hypotheses concerning the predictive validity of salience measures received marginal support. One measure of sex-role salience (schematic error score) was found to be predictive of adjustment in sex-typed subjects.

The overall results from the first two tasks provided confirming evidence for the tenets of schema theory. On the self-schema task, sex-typed subjects performed as would be expected of subjects with a highly-developed schema on the dimension of sex roles. As predicted, sex-typed subjects generally demonstrated higher levels of sex-role salience in the perception of others, suggesting the importance of sex-role stereotypes for this group.

The present study provided some clarification of the issues surrounding the breadth of the sex-role schema in the self-concept. Markus and her coworkers (1982) have argued that the difference in decision time for schematic and counterschematic traits, observed in sex-typed subjects, suggests that they possess a self-schema for

either masculinity or femininity but not a broad-based sex-role schema, as Bem postulates. The hesitation with which sex-typed subjects in this study endorsed sex-incongruent traits may indicate that in the self-concept of sex-typed individuals masculinity and femininity form a bipolar schema which is more highly-developed at the sex-congruent end. The responses of males and females on the sex-role schema (others) task lend some support to this hypothesis of a bipolar schema. Responses of both sexes suggested schematic processing on descriptions of both males and females; however, subjects were more accurate at processing stereotyped information from descriptions of characters of their own gender. Many researchers have sugggested that, in developing their sex-role identity, children must learn what is appropriate for both sexes (Constantinople, 1979; Pleck, 1976; Rebecca, Hefner & Oleshansky, 1976); and therefore, the sex-role self-schema would incorporate information relevant to being male and being female.

The findings of this study have not resolved the controversy surrounding the sex-role schemata of androgynous subjects. The data suggest that androgynous subjects of both sexes have well-articulated schemata on instrumental and expressive dimensions. If the self-schemata of these individuals are tied to overall feelings of masculinity and femininity, one might expect hesitation in the rejection of both types of traits. Although the data from rejection decision times are inconclusive, the relative lack of hesitation with which androgynous subjects reject both schematic and counterschematic

traits may indicate the absence of masculine and feminine self-schemata. Without further corroboration this suggestion remains highly speculative; however, it is consistent with current theories of androgyny (Bem et al., 1976; Pyke, Note 4; Spence & Helmreich, 1979). This position is also bolstered by studies of childrearing practices (Block, 1973; Kelly & Worell, 1976) which have found that androgynous individuals have developed a different pattern of identification because both parents were salient and modelled consideration and competence.

The predictions surrounding the sex-role schematic processing (of self-relevant information) of cross-sexed subjects rested on the assumption that their responses would be the mirror image of those of sex-typed individuals. Although most of the differences between cross-sexed subjects and individuals of other sex-role orientation groups did not reach statistical significance, the pattern of responses of cross-sexed females was generally consistent with these predictions. This was not the case for cross-sexed males who were slow to endorse counterschematic traits, although they endorsed many. Do they hesitate in the endorsement of these traits because feminine traits are generally viewed less favorably (McKee & Sherriffs, 1957; Pedhazur & Tetenbaum, 1979) or because cross-sexed behavior in males receives a great deal of negative reinforcement (Fagot, 1977; Feinman, 1974, 1981; Hartley, 1959)? Both of these explanations are plausible; however, the response of males (all groups combined) in this study argues against these explanations. Males, in general, showed no difference in their decision times for endorsing masculine and

feminine characteristics. Perhaps cross-sexed males are slow in their endorsement decision times because they do not invoke a sex-role schema when processing self-relevant information. Males are initially socialized to be masculine by learning to avoid feminine behaviors and characteristics (Hartley, 1959; Pleck, 1976); therefore, there may be more confusion in the self-concept of cross-sexed males. In contrast, Schell and Silber (1968) have reported that normal preschool females display mixed sex-role behavior and are seldom negatively reinforced for exhibiting masculine characteristics. As might be expected, cross-sexed females in this study responded like sex-typed males. Unlike cross-sexed males, they appear to be certain of their identity. The responses of cross-sexed females were also similar to those of masculine males on the sex-role schema (others) task, showing high levels of schematic processing (sex-role salience) in the perception of others. Cross-sexed males, however, displayed a complete lack of sex-role schematic functioning, with the lowest score of all groups, suggesting that the sex-role dimension has little meaning for them. This may be the result of not having learned the "rules" (Constantinople, 1979) of "appropriate" sex-role behavior. These data raise new questions concerning the possibility that different mechanisms are involved in the development of a cross-sexed identity in males and in females.

The unexpected findings relating to sex differences in the decision times for endorsing schematic and counterschematic traits leads to some speculation. Females in this study endorsed sex-

congruent traits, significantly more quickly than males, suggesting that femininity is more salient in the self-concept of females than is masculinity in the self-concept of males. The establishment of an "appropriate" sex-role identification is considered to be an easier task for females who can usually identify with their primary caretaker (Hacker, 1957; Pleck, 1976). Perhaps this early identification with the same-sex parent makes femininity a more salient feature of the self-concept. Males in this study were found to endorse more counterschematic traits more quickly than females and to show no difference between decision times for endorsement of schematic and counterschematic traits. There was also a trend for males to show less hesitation in endorsing sex-incongruent traits than females. This finding is somewhat unexpected given the anticipated influence of the womens' movement on females. In addition, Hoffman and Fidell (1979) reported that employed adult males, in their study, were most consistent in stating that they lacked feminine traits. Males in this sample, recruited from undergraduate psychology classes, may not be representative of males in general.

The phenomenon of stereotyping is best studied by unobtrusive measures. The sex-role schema (others) task shows promise as such a measure. This task provided evidence that both sexes use stereotypes to organize their perception of both males and females. Each sex was also found to be more accurate at processing information relevant to his/her own gender. This suggests that individuals may be more familiar with the "rules" that govern members of their own sex. Evidence that each sex is more efficient at processing traits relevant

to its own gender has also been provided by Brown. Larsen. Rankin and Ballard (1980).

The finding that sex-typed subjects produced the fewest false alarm errors (commission) in the perception of others seems to be at variance with schema theory. It had been hypothesized that, due to higher levels of schematic functioning, sex-typed subjects would be more likely than other subjects to be overinclusive in processing schematic nonpresented material; however, they proved to be more accurate than others. This suggests that, although schematic processing is generally responsible for creating more errors of commission in nonpresented schematic material than in nonpresented neutral or counterschematic material, at higher levels it seems to produce greater accuracy in distinguishing between presented and nonpresented schematic stimuli. It has been reported that specific memory-set instructions, as used in this study, minimize the distortion effect of schemata (Cantor & Mischel, 1977; Tesser. 1978). It is possible that without such instructions sex-typed subjects, with their more highly developed sex-role schemata, would have produced more false alarms than others in the processing of sex-role related material.

The measures in this study which were inspired by schema theory have produced some encouraging findings. The failure of the matching task, however, to produce the desired results is particularly disappointing in view of the speed and ease of its administration. The internal consistency of items and the normal distribution of

scores suggest that this task is measuring "something"; however, that "something" does not discriminate between sex-role orientation groups. Further research is required to determine if this task is salvagable.

The hypotheses concerning the predictive validity of sex-role salience measures received only marginal support. The measures used in this study were found to be poor predictors of sex-role interests. The ability of one salience measure, proportion of schematic errors on the sex-role schema (others) task, to predict neuroticism in sex-typed subjects was established. This suggests that those sex-typed subjects for whom sex-role traits and behaviors are salient in the perception of others display lower levels of neuroticism. In perceiving others, these sex-typed subjects are less likely to be aware of information which might lead to role-conflict. Although this finding is theoretically interesting, the small magnitude of the increase in prediction achieved by adding this measure of sex-role salience to the BSRI Masculinity score is disappointing.

At this point it seems appropriate to ask to what degree this study has contributed to clarifying the issues in the areas of sex-role stereotyping, sex-role consistency and psychological adjustment.

The persistence of stereotypes can be better understood if one considers the "automatic" nature of schematic processing. If one accepts the premise that sex-role stereotypes are limiting (Bem, 1974; Block, 1976; Rosen & Jerdee, 1976) and modification is desirable, an understanding of the cognitive factors which influence schema functioning may provide some suggestions for how stereotypes might be changed. Ashmore and Del Boca (1979), for example, found fewer

inferences about an individual's personality traits were based on sex when other meaningful information about him/her was made salient.

Although schema theory provides a good explanation of cross-situational consistency, in this study differences in level of schematic processing were not predictive of sex-role interests. At present, it seems that the type of recreational and occupation preferences one holds are still primarily determined by one's sex rather than by individual differences in personality or cognitive style. Level of schematic processing, however, may be related to other sex-role behaviors.

Issues surrounding the relationship between sex-role orientation and adjustment have also received some clarification. The Tennessee Self-concept Scale, used in this study, has not produced results to suggest that sex-typed individuals have significantly lower levels of self-esteem than androgynous individuals. As previously discussed, this may be a function of the lesser stress on instrumental skills on this test. In addition, there is some suggestion that, within the sex-typed group, a higher level of schematic processing is related to a lesser degree of neuroticism. For sex-typed females masculinity was also found to be significantly correlated with neuroticism, with higher levels of masculinity predicting greater conflict (neuroticism). Although good adjustment in sex-typed females is not predicted by higher levels of femininity, it appears to be predicted by lower levels of masculinity. It is conceivable that sex-typed individuals, in learning an "appropriate" sex-role orientation, differ

from others primarily in the special attention they give to what they should not be rather than by the attention they give to what they should be.

In summary, sex-role salience, as evidenced by schematic processing along the sex-roles dimension has proven to be a useful construct. In addition to providing some clarification for current issues in the sex roles literature, it has also caused some new questions to be raised, particularly with reference to the development of a cross-sexed identification.

Research in the area of sex-role salience is in its infancy. The construct may be studied further with the measures outlined in this study; however, the development of tasks or tests which might be administered more quickly and more easily would facilitate research on larger samples. In addition, the development of measures suitable for use with various age groups would allow researchers to study sex-role salience as it varies across the life-cycle.

Further research may be directed to questions surrounding the developmental stages and psychological concomitants of sex-role salience. The study of methods by which sex-role salience might be modified and the conditions under which it should or should not be modified has been left to future research.

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Appendix A

Descriptive Lists and Slides on Sex Role Schema (others) Task

Mike

Mike is a 24 year old man.

Mike was born in New York.

Mike is an engineer.

Mike is independent.

Mike is generous.

Mike likes woodworking.

Mike is decisive.

Mike likes listening to music.

Mike likes hunting.

Mike is emotional.

Mike likes playing chess.

Mike plans to visit Spain.

Presented ("Seen") Material	New ("Not Seen") Material
New York (F)	Washington (F)
engineer (F)	mathematician (F)
woodworking (S)	repairing a car (S)
generous (N)	healthy (N)
decisive (S)	stern (S)
listening to music (N)	drinking wine (N)
playing chess (S)	building a fire (S)
emotional (CS)	tender (CS)
hunting (S)	collecting stamps (S)
independent (S)	takes risks (S)
Spain (F)	France (F)

S = Schematic CS = Counterschematic N = Neutral F = Filler

For the recognition task, slides containing new material were intermingled in random order with slides containing previously presented material. The first five and last slides presented were fillers.

Appendix A Continued

Mary

Mary is a 24 year old woman.

Mary was born in Los Angeles.

Mary is planning a career in nursing.

Mary is affectionate.

Mary likes watching football.

Mary is adaptive.

Mary likes swimming.

Mary likes sewing.

Mary likes planning celebrations.

Mary is graceful.

Mary hopes to graduate and find a job.

Presented ("Seen") Material	New ("Not Seen") Material
nursing (F)	social worker (F)
Los Angeles (F)	San Francisco (F)
planning a celebration (S)	reading cookbooks (S)
adaptive (N)	fatigued (N)
watching football (CS)	shovelling snow (CS)
affectionate (S)	sentimental (S)
swimming (N)	playing backgammon (N)
talkative (S)	yielding (S)
graceful (S)	cheerful (S)
sewing (S)	cleaning the house (S)
find a job (F)	find a friend (F)

Appendix A Continued

John

John is a 29 year old man.

John was born in Chicago.

John is employed as a pilot.

John is successful.

John likes mowing the lawn.

John likes playing the stockmarket.

John likes reading mysteries.

John is aggressive.

John is honest.

John likes playing poker.

John is sympathetic.

John would like to live in California.

Presented ("Seen") Material	New ("Not Seen") Material
pilot (F)	lawyer (F)
Chicago (F)	Detroit (F)
mowing the lawn (S)	fishing (S)
reading mysteries (N)	saving money (N)
successful (S)	muscular (S)
honest (N)	humorous (N)
playing poker (S)	driving a motorcycle (S)
playing the stockmarket (S)	reading Popular Mechanics (S)
sympathetic (CS)	shy (CS)
aggressive (S)	clear thinking (S)
California (F)	Arizona (F)

Appendix A Continued

Jane

Jane is a young woman of 25.

Jane recently moved to Montreal.

Jane works as a secretary.

Jane is soft-spoken.

Jane is friendly.

Jane likes knitting.

Jane likes shopping for food.

Jane is warm.

Jane likes bowling.

Jane is confident.

Jane likes doing ceramics.

Jane is planning a vacation in Hawaii.

Presented ("Seen") Material	New ("Not Seen") Material
young woman of 25 (F)	married woman (F)
secretary (F)	waitress (F)
doing ceramics (S)	washing dishes (S)
bowling (N)	playing monopoly (N)
knitting (S)	decorating a room (S)
soft-spoken (S)	soft-hearted (S)
warm (S)	charming (S)
confident (CS)	dominant (CS)
shopping for food (S)	watering plants (S)
friendly (N)	conventional (N)
Hawaii (F)	Tahiti (F)

Appendix A Continued

Pete

Pete is a young man born in 1954.

Pete lives in Vancouver.

Pete is studying mathematics.

Pete is self-reliant.

Pete is athletic.

Pete likes watching T.V.

Pete likes smoking a cigar.

Pete likes canoeing.

Pete is reliable.

Pete likes raising flowers.

Pete is competitive.

Pete would like to travel in Europe.

Presented ("Seen") Material	New ("Not Seen") Material
Born in 1954 (F)	54 year old man (F)
mathematics (F)	geology (F)
watching T.V. (N)	sketching (N)
smoking a cigar (S)	car racing (S)
raising flowers (CS)	typing (CS)
self-reliant (S)	leadership ability (S)
reliable (N)	theatrical (N)
competitive (S)	adventurous (S)
canoeing (S)	playing drums (S)
athletic (S)	enterprising (S)
Europe (F)	Africa (F)

Appendix A Continued

Gail

Gail is a 26 year old woman.

Gail lives in Ottawa.

Gail works as a kindergarten teacher.

Gail is tactful.

Gail likes reading fiction.

Gail is understanding.

Gail is gullible.

Gail likes modelling clothes.

Gail is submissive.

Gail likes preparing a meal.

Gail likes making model planes.

Gail will visit England this year.

Presented ("Seen") Material	New ("Not Seen") Material
26 year old woman (F)	elderly woman (F)
teacher (F)	clerk (F)
understanding (S)	frivolous (S)
gullible (S)	soothes hurt feelings (S)
tactful (N)	versatile (N)
making model planes (CS)	repairing wiring (CS)
modelling clothes (S)	cleaning a closet (S)
reading fiction (N)	walking in the woods (N)
submissive (S)	gentle (S)
preparing a meal (S)	ballet dancing (S)
England (F)	Norway (F)

Appendix A Continued

Carl

Carl is a 21 year old man.

Carl attends Stanford University.

Carl is working toward a degree in physics.

Carl is ambitious.

Carl is likable.

Carl likes going to a movie.

Carl likes repairing clocks.

Carl is forceful.

Carl likes baking a cake.

Carl is courageous.

Carl likes weightlifting.

Carl is looking for a new apartment.

Presented ("Seen") Material	New ("Not Seen") Material
Stanford University (F)	McGill University (F)
physics (F)	sociology (F)
likable (N)	unsystematic (N)
baking a cake (CS)	having a manicure (CS)
repairing a clock (S)	washing a car (S)
forceful (S)	cynical (S)
courageous (S)	individualistic (S)
going to a movie (N)	skiing (N)
ambitious (S)	analytical (S)
weightlifting (S)	programming a computer (S)
new apartment (F)	new car (F)

Appendix A Continued

Anne

Anne is a 20 year old woman.

Anne lives in Toronto.

Anne wants to be a dietitian.

Anne is considerate.

Anne likes arranging flowers.

Anne is optimistic.

Anne likes hooking rugs.

Anne is assertive.

Anne likes doing crossword puzzles.

Anne is superstitious.

Anne likes doing laundry.

Anne is applying to graduate school.

Presented ("Seen") Material	New ("Not Seen") Material
graduate school (F)	job interview (F)
dietitian (F)	physiotherapist (F)
optimistic (N)	satisfied (N)
hooking a rug (S)	taking an art course (S)
superstitious (S)	compassionate (S)
assertive (CS)	inventive (CS)
doing laundry (S)	setting a table (S)
arranging flowers (S)	teaching children (S)
doing crossword puzzles (N)	attending plays (N)
considerate (S)	loyal (S)
20 year old woman (F)	childless woman (F)

Appendix B

Personal Concept of Similarity Questionnaire

Code number:_____ Age:_____ Sex:_____

Instructions

You will find below a list of several pairs of items. These are divided into sets, with each set containing two pairs. One item is repeated in each of the two pairs. You are asked to underline the pair which you consider to be the most similar. Do not deliberate for a long time before responding. Simply underline the pair that seems to be most alike to you. There are no right or wrong answers. We are interested in your own impressions.

1. Spaghetti & Pizza OR Chili & Spaghetti
2. Auto mechanic & Auto racer OR Auto racer & Speedskater
*3. Manicurist & Hairdresser OR Hairdresser & Barber
4. Philodendron & Palm Tree OR Palm tree & Cactus
*5. Perfume & After-shave cologne OR Lipstick & Perfume
6. Chocolate & Licorice OR Chocolate & Taffy
*7. Tie & Trousers OR Skirt & Trousers
8. Taking a shower & Walking in the rain OR Taking a shower & Taking a bath
*9. Ballet dancing & Watching a fashion show OR Watching a football game & Watching a fashion show
10. Johnny Carson & Dick Cavett OR Dick Cavett & Mike Douglas

Appendix B Continued

*11. Dress & Blouse or Blouse & Shirt

12. Mary Tyler Moore & Carol Burnett OR Julie Andrews & Carol Burnett

13. Phyllis Diller & Bob Hope OR Bob Hope & Frank Sinatra

14. Sewing & Knitting OR Knitting & Crocheting

*15. Washing a car & Cleaning an oven OR Washing a car & Taking out garbage

16. Architect & Building Contractor OR Draftsman & Architect

17. Coat & Sweater OR Sweater & Vest

*18. Slip & Undershirt OR Slip & Girdle

19. Hot dog & Hamburger OR Hamburger & Souvlaki

*20. Hair ribbon & Bowtie OR Hair ribbon & Necklace

21. Hercules & Zeus OR Zeus & Apollo

22. Telephone book & Dictionary OR Dictionary & Atlas

23. Sky diver & Pilot OR Pilot & Train engineer

*24. Nurse & Stewardess OR Waiter & Stewardess

25. Playing the piano & Playing drums OR Playing the piano & Writing music

*26. Woodworking & Dressmaking OR Fishing & Woodworking

27. Backgammon & Chess OR Chess & Checkers

*28. Making model planes & Playing chess OR Making model planes & Crocheting

29. Lantern & Lamp OR Lantern & Flashlight

*30. Earrings & Bracelet OR Cufflinks & Earrings

31. Houseboat & Mobile Home OR Yacht & Houseboat

Appendix B Continued

32. Model & Blueprint OR Blueprint & Roadmap

*33. Brooch & Necklace OR Tie pin & Brooch

34. Housewife & Nurse OR Housewife & Mother

35. Engineer & Mechanic OR Engineer & Physician

*36. Father & Mother OR Mother & Daughter

37. Carnival & Circus OR Carnival & Fair

Appendix C

Personal History Questionnaire

Code:_____ Age:_____ Sex: M____ F____

Place of Birth:_____

If not Canada, when did you arrive?_____

Educational level or present school grade_____

Occupation (if applicable)_____

Civil Status: Single___ Married___ Separated___ Divorced___ Widowed___

Position in family of origin:_____

Number of older brothers_____younger brothers_____

Number of older sisters_____ younger sisters_____

In which religion (if any) were you raised?_____

Ages of your parents when you were born: Father_____Mother_____

Occupation of father or male guardian (if retired, before retirement):

_____

Occupation of mother or female guardian (if retired, before retirement)_____

Educational level of father:_____

Educational level of mother:_____

Current living arrangements: alone_____ with parents_____

with spouse_____ with friend (same sex)_____

with friend (opp. sex)_____ with a group_____

Appendix D

Brief Written Description of Procedure

Person Perception Study

Thank you for volunteering to participate in this study on person perception. The entire procedure will take approximately one and a half hours. You will spend half of that time doing tasks where the experimenter will be present. The remainder of the time will be spent filling in questionnaires. These questionnaires will give us some idea of the type of person you are. In order to ensure confidentiality, each participant is given a code number, which will be used on every questionnaire instead of your name.

The specific hypotheses of this study and the results will be sent on its completion to everyone who participated. Please fill in your name and address below so that these may be sent to you.

Thank you once again for your time and we hope you enjoy participating in this research.

Name.....

Address.....

.....

.....

Appendix E

Subjects' Characteristics

	Means	
	Males	Females
Age	24.29	26.20
Education (in years)	14.57	14.48
Number of older brothers	.85	.48
Number of younger brothers	.56	.65
Number of older sisters	.74	.51
Number of younger sisters	.45	.44
Age of father at subject's birth	33.07	32.19
Age of mother at subject's birth	29.14	28.55
Occupation of father[1]	3.0	3.4
Occupation of mother[1]	5.9	6.6
Education of father (in years)	12.2	11.5
Education of mother (in years)	11.4	10.5

[1] According to the classification system of Hollingshead (1957).

Appendix E Continued

Subjects' Characteristics

	Frequencies	
	Males	Females
Civil Status		
Single	68	57
Married	12	21
Separated/Divorced	3	3
Widowed	2	4
Birthplace		
Canada/U.S.	68	68
England/Australia	1	0
Europe	6	11
Middle East	6	2
Orient	1	1
India/Pakistan	0	1
Asia	0	0
Africa	1	0
Latin America	2	2
Religion		
None	2	2
Protestant	10	19

Appendix E Continued

	Frequencies	
	Males	Females
Catholic	54	48
Jewish	14	11
Other	5	5
Birth Order		
First born	27	27
Second	21	33
Third	15	11
Fourth	12	9
Fifth	4	3
Sixth	1	1
Seventh	3	1
Eighth	1	0
Ninth	1	0
Living Arrangements		
With parents	14	12
Alone	46	39
With spouse	12	20
With friend (same sex)	8	5
With friend (opposite sex)	4	5
With group	1	3
With own children (no partner)	0	1

Appendix F

Univariate F-Tests for the Effect of Sex and Sex-Type on the Endorsements and Rejections of Neutral Traits on the Self-Schema Task with Multivariate Tests of Significance

Univariate F-Tests

Effect	Variate	Hypothesis Mean Square	Error Mean Square	F	P
Sex df=1,152	endorsement	.01374	.00673	2.042	.16
	rejection	.00564	.00744	.758	.39
Sex-type df=3,152	endorsement	.00222	.00673	.330	.80
	rejection	.00218	.00744	.293	.83
Sex X Sex-type df=3,152	endorsement	.00200	.00673	.298	.83
	rejection	.00060	.00744	.081	.97

Multivariate Tests of Significance (Pillais)

Effect	Pillais Value	F	P	Degrees of Freedom
Sex	.01393	1.066	.35	2,151
Sex-type	.02755	.713	.64	6,304
Sex X Sex-type	.01049	.267	.95	6,304

Appendix G

Analysis of Variance Source Table for Decision Times of Schematic and Counterschematic Endorsements on Self-Schema Task

Source	Sum of Squares	D.F.	Mean Square	F	P
Sex	.01086	1	.01086	1.62	.21
Sex-type	.01783	3	.00594	.89	.45
Sex X Sex-type	.06377	3	.02126	3.18	.03
Error	1.01724	152	.00669		
Trait type	.00100	1	.00100	.31	.58
Trait type X Sex	.03420	1	.03420	10.78	.001
Trait type X Sex-type	.07416	3	.02472	7.79	.0001
Trait type X Sex X Sex-type	.00524	3	.00175	.55	.65
Error	.48205	152	.00317		

Appendix H

Analysis of Variance Source Table for Decision Times of Schematic and Counterschematic Rejections on Self-Schema Task

Source	Sum of Squares	D.F.	Mean Square	F	P
Sex	.00386	1	.00386	.21	.65
Sex-type	.02204	3	.00735	.39	.76
Sex X Sex-type	.02074	3	.00691	.37	.77
Error	2.83529	152	.01865		
Trait type	.00167	1	.00167	.17	.69
Trait type X Sex	.00712	1	.00712	.71	.40
Trait type X Sex-type	.03690	3	.01230	1.22	.31
Trait type X Sex X Sex-type	.01767	3	.00589	.58	.63
Error	1.53412	152	.01009		

Appendix I

Univariate F-Tests for the Effects of Sex and Sex-Type on the Number of Self-Schema Endorsements with Multivariate Tests of Significance

Univariate F-Tests

Effect	Variate	Hypothesis Mean Square	Error Mean Square	F	P
Sex df=1,152	schematic	7.225	4.803	1.50	.22
	counter-schematic	112.225	6.725	16.68	.0001
Sex-type df=3,152	schematic	155.223	4.803	32.33	.00001
	counter-schematic	163.419	6.725	24.30	.00001
Sex X Sex-type df=3,152	schematic	10.276	4.803	2.14	.10
	counter-schematic	29.883	6.725	4.44	.005

Multivariate Tests of Significance (Pillais)

Effect	Pillais Value	F	P	Degrees of Freedom
Sex	.09994	8.38	.0005	2,151
Sex-type	.69535	27.00	.00001	6,304
Sex X Sex-type	.12990	3.52	.002	6,304

Appendix J

Analysis of Variance Source Table for Response Latencies to Presented Items on Sex-Role Schema (others) Task

Source	Sum of Squares	D.F.	Mean Square	F	P
Between Subjects	73.238	159	.4606		
Within Subjects	12.683	320	.0396		
Stimulus type	1.711	2	.8555	24.79	.0001
Error	10.972	318	.0345		
Total	85.921	479	.1790		

Appendix K

Analysis of Variance Source Table for Response Latencies to Nonpresented Items on Sex-Role Schema (others) Task

Source	Sum of Squares	D.F.	Mean Square	F	P
Between Subjects	20.299	159	.1276		
Within Subjects	2.122	320	.0066		
Stimulus Type	.545	2	.2729	55.049	.0001
Error	1.576	318	.0049		
Total	22.422	479	.0468		

Appendix L

Analysis of Variance Source Table for Types of Errors of Omission on Sex-Role Schema (others) Task

Source	Sum of Squares	D.F.	Mean Square	F	P
Sex	2.647	1	2.647	10.43	.002
Sex-type	.785	3	.262	1.03	.38
Sex X Sex-type	1.181	3	.394	1.55	.20
Error	38.562	152	.254		
Error type	2.256	2	1.128	12.80	.0000
Error type X Sex	.839	2	.420	4.76	.009
Error type X sex-type	1.209	6	.201	2.29	.04
Error type X Sex X Sex-type	.390	6	.066	.75	.61
Error	26.799	304	.088		

Appendix M

Analysis of Variance Source Table for 'Schematic Errors of Commission (False Alarms) on Sex-Role Schema (others) Task

Source	Sum of Squares	D.F.	Mean Square	F	P
Sex	.000	1	.000	.561	.45
Sex-type	.006	3	.002	3.266	.02
Sex X Sex-type	.006	3	.002	3.692	.01
Error	.086	152	.001		
Total	.098	159	.001		

Appendix N

Analysis of Variance Source Table for Latency Difference Scores on Sex-Role Schema (others) Task

Source	Sum of Squares	D.F.	Mean Square	F	P
Sex	.000	1	.000	.003	.96
Sex-type	.015	3	.005	2.416	.07
Sex X Sex-type	.029	3	.010	4.712	.004
Error	.313	152	.002		
Total	.357	159	.002		

Appendix O

Analysis of Variance Source Table for Schematic Errors from Descriptions of Males and Females on Sex-Role Schema (others) Task

Source	Sum of Squares	D.F.	Mean Square	F	P
Sex	14.45	1	14.45	3.75	.05
Error	609.35	158	3.86		
Description	0.00	1	0.00	0.00	1.00
Description X Sex	12.80	1	12.80	13.55	.0003
Error	149.20	158	.94		

Appendix P

Analysis of Variance Source Table for Latency Difference Scores[1] from Descriptions of Males and Females on the Sex-Role Schema (others) Task

Source	Sum of Squares	D.F.	Mean Square	F	P
Sex	.0003	1	.0003	.07	.79
Error	.7256	158	.0046		
Description Type	.0131	1	.0131	3.47	.06
Sex X Description Type	.0073	1	.0073	1.93	.16
Error	.5943	158	.0038		

[1] Neutral minus schematic "Seen" stimuli

Appendix Q

Analysis of Variance Source Table for Total Matching Task (PCSQ) Scores

Source	Sum of Squares	D.F.	Mean Square	F	P
Sex	.100	1	.100	.011	.92
Sex-type	26.430	3	8.810	1.010	.39
Sex X Sex-type	.328	3	.109	.013	.99
Error	1326.240	152	8.725		
Total	1353.100	159	8.510		

Appendix R

Univariate F-Tests for the Effects of Sex and Sex-Type on Sex-Role Interest Scales with Multivariate Tests of Significance

Univariate F-Tests

Effect	Variate	Hypothesis Mean Square	Error Mean Square	F	P
Sex df=1,152	Male-Valued	2.299	.280	8.20	.005
	Female-Valued	5.833	.222	26.27	.00001
	Bipolar	17.637	.079	224.41	.00001
Sex-type df=3,152	Male-Valued	.362	.280	1.29	.73
	Female-Valued	.096	.222	.43	.28
	Bipolar	.074	.079	.94	.42
Sex X Sex-type df=3,152	Male-Valued	.264	.280	.94	.42
	Female-Valued	.833	.222	3.75	.01
	Bipolar	.192	.079	2.45	.07

Multivariate Tests of Significance (Pillais)

Effect	Pillais Value	F	P	Degrees of Freedom
Sex	.598	74.64	.00001	3,150
Sex-type	.045	.77	.64	9,456
Sex X Sex-type	.152	2.71	.004	9,456

Appendix S

Multiple Regression Summary Tables for Interest Scales

Regression of Male-Valued Interest Scale on Measures of Sex-Role Orientation and Sex-Role Salience (Males)

Variable	Simple R	Multiple R	Increase in R^2	Significance of Increase	Beta	Significance of Beta	F	Significance of F
1. Masculinity	.32	.32	.10	.00	.24	.01	9.38	.00
2. Schema (others) Latencies	.09	.33	.01	.48	.26	.50	4.92	.01
3. Matching	.09	.33	.00	.72	.01	.73	3.29	.03
4. Self-Schema Latencies	.11	.33	.00	.79	-.04	.80	2.46	.05
5. Schematic Errors	-.07	.33	.00	.89	-.04	.89	1.94	.10

Appendix S Continued

Regression of Female-Valued Interest Scale on Measures of Sex-Role Orientation and Sex-Role Salience (Males)

Variable	Simple R	Multiple R	Increase in R^2	Significance of Increase	Beta	Significance of Beta	F	Significance of F
1. Femininity	.24	.24	.06	.03	.22	.08	5.06	.03
2. Schematic Errors	.10	.26	.01	.41	.18	.46	2.87	.06
3. Self-Schema Latencies	-.10	.26	.01	.55	-.05	.66	2.02	.12
4. Masculinity	-.15	.27	.00	.70	-.04	.68	1.54	.20
5. Matching	.00	.27	.00	.70	.01	.72	1.25	.30
6. Schema (others) Latencies	-.08	.27	.00	.73	-.12	.73	1.05	.40

Appendix S Continued

Regression of Bipolar Interest Scale on Measures of Sex-Role Orientation and Sex-Role Salience (Males)

Variable	Simple R	Multiple R	Increase in R^2	Significance of Increase	Beta	Significance of Beta	F	Significance of F
1. Femininity	-.24	.24	.06	.03	-.12	.09	5.18	.03
2. Masculinity	.17	.26	.01	.34	.03	.53	3.06	.05
3. Self-Schema Latencies	.13	.27	.00	.53	.05	.51	2.16	.10
4. Schema (others) Latencies	.09	.28	.00	.57	.10	.60	1.68	.16
5. Matching	-.00	.28	.00	.75	-.00	.74	1.35	.25
6. Schematic Errors	-.04	.28	.00	.90	-.02	.90	1.11	.36

Appendix S Continued

Regression of Male-Valued Interest Scale on Measures of Sex-Role Orientation and Sex-Role Salience (Females)

	Variable	Simple R	Multiple R	Increase in R^2	Significance of Increase	Beta	Significance of Beta	F	Significance of F
1.	Masculinity	.14	.14	.02	.21	.10	.18	1.63	.21
2.	Femininity	.10	.18	.03	.27	.11	.30	1.43	.24
3.	Self-Schema Latencies	-.11	.21	.04	.38	-.19	.47	1.22	.31
4.	Schema (others) Latencies	-.06	.21	.04	.70	-.19	.68	.94	.45
5.	Matching	.02	.21	.05	.78	.01	.77	.76	.58
6.	Schematic Errors	.04	.22	.05	.78	.06	.78	.64	.70

Appendix S Continued

Regression of Female-Valued Interest Scale on Measures of Sex-Role Orientation and Sex-Role Salience (Females)

	Variable	Simple R	Multiple R	Increase in R^2	Significance of Increase	Beta	Significance of Beta	F	Significance of F
1.	Femininity	.36	.36	.13	.00	.28	.00	12.23	.00
2.	Masculinity	-.26	.42	.18	.03	-.13	.05	8.87	.00
3.	Self-Schema Latencies	.16	.44	.19	.22	.53	.18	6.47	.00
4.	Schema (others) Latencies	.10	.45	.20	.46	.01	.44	4.96	.00
5.	Matching	.02	.45	.20	.71	.08	.70	3.96	.00
6.	Schematic Errors	.03	.45	.20	.79	.05	.79	3.27	.01

Appendix S Continued

Regression of Bipolar Interest Scale on Measures of Sex-Role Orientation and Sex-Role Salience (Females)

Variable	Simple R	Multiple R	Increase in R^2	Significance of Increase	Beta	Significance of Beta	F	Significance of F
1. Masculinity	.43	.43	.18	.00	.17	.00	19.09	.00
2. Femininity	-.19	.45	.02	.15	-.09	.14	10.76	.00
3. Self-Schema Latencies	.04	.46	.00	.49	.10	.44	7.29	.00
4. Schematic Errors	.07	.47	.00	.51	.07	.50	5.54	.00
5. Matching	-.02	.47	.00	.71	.00	.68	4.41	.00
6. Schema (others) Latencies	.03	.47	.00	.78	-.07	.78	3.65	.00

Appendix T

Analysis of Variance Source Table for Total Self-Esteem Score

Source	Sum of Squares	D.F.	Mean Square	F	P
Sex	514.81	1	514.81	.62	.43
Sex-type	7548.99	3	2516.33	3.04	.03
Sex X Sex-type	1692.19	3	564.06	.68	.57
Error	125775.25	152	827.47		
Total	135531.24	159	852.40		

Appendix U

Multiple Regression Summary Tables for Measures of Adjustment

Regression of Total Self-Esteem Score on Measures of Sex-Role Salience and Masculinity (Sex-typed Males)

	Variable	Simple R	Multiple R	Increase in R^2	Significance of Increase	Beta	Significance of Beta	F	Significance of F
1.	Masculinity	.39	.39	.15	.02	27.55	.01	5.99	.02
2.	Schema (others) Latencies	.21	.48	.08	.08	43.74	.14	4.80	.02
3.	Matching	-.06	.50	.02	.38	-1.49	.33	3.44	.03
4.	Schematic Errors	-.18	.51	.01	.54	-14.14	.54	2.62	.05

Appendix U Continued

Regression of Neuroticism Score on Measures of Sex-Role Salience and Masculinity (Sex-typed Males)

	Variable	Simple R	Multiple R	Increase in R^2	Significance of Increase	Beta	Significance of Beta	F	Significance of F.
1.	Masculinity	.47	.47	.23	.00	-9.47	.01	9.68	.00
2.	Schematic Errors	-.35	.55	.08	.07	-12.88	.11	6.96	.00
3.	Self-Schema Latencies	.15	.57	.02	.31	5.82	.36	5.01	.01
4.	Schema (others) Latencies	.04	.57	.00	.86	1.80	.86	3.65	.02
5.	Matching	.12	.57	.00	.89	.08	.89	2.83	.03

Appendix U Continued

Regression of Total Self-Esteem Score on Measures of Sex-Role Salience and Masculinity (Sex-typed Females)

	Variable	Simple R	Multiple R	Increase in R^2	Significance of Increase	Beta	Significance of Beta	F	Significance of F
1.	Matching	-.20	.20	.04	.25	-1.73	.29	1.35	.25
2.	Schematic Errors	-.19	.27	.03	.32	-23.58	.26	1.18	.32
3.	Masculinity	-.05	.30	.02	.49	-6.58	.49	.94	.43
4.	Self-Schema Latencies	-.02	.31	.01	.69	-6.90	.73	.73	.58
5.	Schema (others) Latencies	-.08	.31	.00	.83	-10.84	.83	.57	.72

Appendix U Continued

Regression of Neuroticism Score on Measures of Sex-Role Salience and Masculinity (Sex-typed Females)

	Variable	Simple R	Multiple R	Increase in R^2	Significance of Increase	Beta	Significance of Beta	F	Significance of F
1.	Masculinity	-.30	.30	.09	.09	-6.73	.03	3.16	.09
2.	Schematic Errors	-.26	.46	.12	.04	-13.32	.05	4.12	.03
3.	Matching	-.21	.52	.06	.15	-.58	.24	3.59	.03
4.	Schema (others) Latencies	-.23	.55	.03	.25	-18.76	.23	3.07	.03
5.	Self-Schema Latencies	.13	.56	.00	.68	2.55	.68	2.42	.06