

## **The Relation Between Gender Schemas and Adults' Recall of Stereotyped and Counterstereotyped Televised Information<sup>1</sup>**

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*The relation between adults' gender-related personality characteristics and memory for gender-stereotyped and counterstereotyped televised information was examined. Eighty middle-class undergraduates, equally divided by gender (92% Caucasian and 8% minority groups), viewed a television program that presented two plots: one was traditionally gender-stereotyped and the other was counterstereotyped. Three weeks after viewing, students answered questions assessing their recall of stereotyped and counterstereotyped information that had been presented in the television program. Masculinity and femininity scores were also assessed. Results indicated that gender aschematic adults recalled more counterstereotypical information than did gender schematic adults. Results were interpreted within an information processing model.*

The constructive nature of memory is influenced by a person's knowledge base and expectations, more generally known as schemas. A schema is a "cognitive structure, a network of associations" (Bem, 1983, p. 603) that is used to "select and actively modify experience in order to arrive at a coherent, unified, expectation-confirming and knowledge-consistent representation of an experience" (Alba & Hasher, 1983, p. 203). Gender stereotypes, a type of schema, play a significant role in information processing and memory organization (Martin & Halverson, 1981). Gender schemas guide attention and perception, the encoding of information into

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long-term memory, and the eventual retrieval of that information (Calvert & Huston, 1987). In each of these phases, information is sometimes filtered out that is irrelevant or inconsistent with one's expectations (Taylor & Crocker, 1981).

Television programming, a ubiquitous source of gender-related information, amplifies real-life gender stereotypes. Television depictions of men and women typically rely on gender stereotypes as part of a program formula. Media presentations distort differences between the genders by presenting men, almost exclusively, in positions of authority. Powerful personality characteristics and prestigious occupational roles are displayed overwhelmingly by men (Calvert & Huston, 1987). Because adults watch approximately four hours of television per day (Comstock, 1991), gender stereotypes are both cultivated and reinforced.

All television content, though, is viewed by a person who constructs a story, a construction that is partly based on what he or she expects to see. This construction may be guided by the degree to which a person organizes his or her own personality by gender stereotypes. It is this interface, between the knower and the known, that is the focus of our inquiry. Specifically, we describe the relation between adults' gender-related personality attributes and their recall of stereotyped and counterstereotyped televised information.

### *Gender Schematic vs. Aschematic Personality Characteristics*

Traditionally, men in American culture were expected to embody masculine characteristics like independence and self-confidence, while women were expected to embody feminine characteristics like warmth and loyalty. Such people are considered gender typed and gender schematic because they organize their sense of self around socially prescribed gender characteristics (Bem, 1983).

During the 1970s, the adaptive qualities of traditionally masculine and feminine characteristics for men and women, respectively, were first questioned. For example, women who were very feminine and not at all masculine were unlikely to assert themselves in mixed-gender group discussions (Lewittes & Bem, 1983) or to perform cross-gender behaviors without discomfort (Bem & Lenney, 1976). Bem (1974) developed the concept of androgyny, referring to a lack of gender-based judgments, to describe an adaptive and gender-aschematic personality organization. Androgynous individuals experienced little discomfort performing cross-gender-typed tasks; thus, they drew on a large repertoire of behaviors to succeed in diverse situations (Bem, 1976).

In a critique of Bem's work, Spence, Helmreich, and Stapp (1975) called for a revision of the androgyny concept. They argued that androgyny should be ascribed only to people who have high levels of both masculinity and femininity, as opposed to similar levels. In other words, people who scored high on both dimensions were thought to differ from those who scored low on both dimensions (Spence *et al.*, 1975). The concept of "undifferentiated" was then applied to those individuals with low levels of both masculinity and femininity. Bem (1977, 1983) utilized this undifferentiated category. Nevertheless, undifferentiated individuals, just like androgynous individuals, were considered gender-aschematic because they do not organize their self-concepts around gender stereotypes (Bem, 1983).

Although they are nontraditional, masculine women and feminine men are considered cross-gender-typed and gender-schematic because they organize their self-concepts around gender attributes (Bem, 1983). Cross-gender-typed men are treated more poorly in American society than are cross-gender-typed women. Women have been given far more latitude to cross barriers of "gender-appropriate" vs. "gender-inappropriate" behaviors than have men because the male gender role was more socially valued. In contrast, men who adopted any feminine attribute, regardless of its adaptive quality, were perceived as weak. For this reason, men may adhere more strictly to gender-typed societal prescriptions and rely more on their gender schemas than do women.

Nevertheless, cultural changes in gender roles in American society may be cultivating more gender-aschematic people. One task for contemporary research is to link content areas like biological gender to personality attributes (Huston, 1983). Links between men and masculinity and women and femininity, which were assumed in the past, require empirical confirmation in a rapidly changing society.

### *Information Processing by Gender-Schematic and -Aschematic Persons*

Gender-schematic individuals, be they adults or children, are more likely to process information in terms of gender than are gender-aschematic individuals. In one study, gender-typed more so than nongender-typed adults recalled a randomly presented sequence of proper names, animal names, verbs, and articles of clothing by clustering those items in terms of gender associations (Bem, 1983).

Like adults, children process schema-consistent information easily. Halverson and Martin (1983), for example, showed children pictures of men and women performing gender-consistent and gender-inconsistent activities.

In a delayed recall task, children distorted the gender of the actor performing gender-inconsistent but not gender-consistent activities. These findings suggest that schema-inconsistent information is often forgotten or distorted, particularly after a delay. It is then that the schema fills in memory gaps with "best guesses" as to the original stimuli (Taylor & Crocker, 1981; Martin & Halverson, 1981).

Gender role stereotypes also affect memory of televised content. For example, List, Collins, and Westby (1981) examined children's memory of traditional and nontraditional television gender role portrayals. Children with high or medium stereotyping levels recalled more role-relevant than role-irrelevant information. By contrast, children who were low in stereotyping recalled role-relevant and role-irrelevant information equally well. Boys recalled less role-irrelevant information than did girls. The latter finding suggests that gender schemas are more salient for boys than for girls.

There is little research on gender schemas and adult processing of televised information. However, research on prejudice supports the thesis that adults also tend to interpret content according to their expectations. For example, Vidmar and Rokeach (1974) surveyed American and Canadian viewers' perceptions of the television series *All in the Family*. Their purpose was to determine whether the program was having the effects that the writers and directors intended—to reduce racial prejudice and to expose misconceived stereotypes. Although viewers who were low in prejudice understood the show's satirical nature, viewers who were high in prejudice took the content at face value, thereby validating and strengthening their racial stereotypes.

Taken together, these studies suggest that gender-schematic adults may well distort the messages of counterstereotypical television programming. This implies that counterstereotypical television programming may actually have the opposite effect of that which was intended.

### *The Present Study*

In the present study, we examined gender-related personality characteristics and recall of television content with gender-relevant themes. The major hypotheses were that (1) gender-aschematic individuals would display better recall of counterstereotypical information than would gender-schematic individuals, and (2) gender-schematic individuals would demonstrate better recall of stereotypically gender-typed information than would gender-aschematic individuals.

## METHOD

### *Participants*

Subjects were 80 college students ( $M = 20$  years, 10 months; range 18 years, 4 months to 24 years, 8 months), who were equally distributed by gender. All participants were middle-class, undergraduate students at a university in a large metropolitan area. The sample was 92% Caucasian and 8% African-American and Asian. None had previously viewed the targeted television episode.

### *Procedure*

Groups of students, who were recruited primarily from undergraduate psychology courses, entered a classroom and were seated facing a television monitor. The experimenter instructed the participants to view the program as they normally watch television at home. They were told that they would later be asked to return and answer questions about the program. The experimenter then activated a videotape recorder that played a 40-minute, color, edited episode from the television series, *Northern Exposure*.

The television program contained two parallel plots. Program scenes alternated between these two plots. The first plot centers around a man and a woman who are stranded in the wilderness after an emergency plane landing. The action concerns their attempts to survive and to leave the wilderness. The pilot, Maggie, assumes responsibility for their safety, a non-traditional role for women. The second plot involves the conflict between two friends, Cindy and Shelly. The difficulty arises when Cindy discovers that her husband is still married to Shelly, his first wife. Both women feel jealous, angry, and inadequate about their physical attractiveness and sexual desirability. This plot shows women in a traditionally gender-typed light as the action deals with concerns about their appearance and ability to attract men.

Both conflicts are resolved. In the first situation, Maggie and Joel each gain an appreciation for the other's strengths and weaknesses, and they are able to leave the wilderness when Joel applies his medical knowledge to repair the plane. In the second situation, the two women renew their friendship, Shelly agrees to divorce her husband, and she finds new value in her relationship with her present partner.

*Delayed Recall of Program Information*

To construct test items, central and incidental elements of the story were identified and put into an open-ended questionnaire of 94 items. Central items were defined as information that was crucial to understanding the story. Incidental items were defined as plot-irrelevant content. Eleven adults viewed the episode; they then rated the questions on the centrality dimension. Each question was also rated on the independent dimension of gender-stereotyped or nongender-stereotyped information. Gender-stereotyped elements were defined as "a set of associations between gender labels and gender-related content-specific beliefs" in areas such as role behaviors, occupations, traits, and physical appearance (Martin, Wood, & Little, 1990, p. 1892). These included both traditional stereotypes and violations of those stereotypes. Nongender-stereotyped items involved content that was not associated with gender. Questions with a minimum of 70% agreement about the centrality and stereotyped nature of the item were retained. Forty-eight items met these criteria.

All items rated central to the plot were gender stereotyped: 11 were traditionally stereotypical and 7 were counterstereotypical. Incidental items included 13 nonstereotyped and 17 stereotyped items; 15 of the stereotyped items were traditionally stereotypical, but only 2 were nonstereotypical. Examples of test items are as follows: "What did Shelly value about herself in high school?" (central-stereotyped); "How does Joel feel about sleeping in the wilderness?" (central-counterstereotyped); and "In what subject does Cindy have a degree?" (incidental-stereotyped).

Participants returned three to four weeks after viewing the program and answered this delayed recall test of 48 open-ended questions. The participants saw drawings of each character with his/her name to assist in character identification.

Responses were scored as correct if a student's answer was explicitly or implicitly presented within the television program. Interobserver reliability was calculated for eight randomly selected questionnaires. Each observer scored each response as either correct or incorrect. Reliability was 92%, calculated as two times the number of agreements divided by the total number of scores for Observer 1 and Observer 2.

*Bem Sex Role Inventory (BSRI)*

Immediately after completing the 48-item recall measure, participants filled out the BSRI, a pencil-and-paper instrument developed by Bem (1974) to measure masculine and feminine personality attributes. Both the

**Table I.** Breakdown of Men and Women Based on Four Gender-Typing Categories

Gender type	Females	Males
	<i>N</i>	<i>N</i>
Gender schematic		
Feminine	9	10
Masculine	13	8
Gender aschematic		
Undifferentiated	8	12
Androgynous	10	10

masculinity and femininity scales contain 20 socially desirable personality characteristics, judged more appropriate for one gender than the other. For example, tender and understanding were classified as feminine, whereas individualistic and assertive were classified as masculine. Twenty neutral items are embedded in the test. Subjects described themselves by all 60 adjectives on a 7-point scale, ranging from 1 (*never or almost never true*) to 7 (*always or almost always true*).

Following procedures recommended by Spence *et al.* (1975), and later used by Bem (1977), median splits were calculated for both the femininity and masculinity dimensions. Those scoring above the midpoint were classified as "high" on that dimension while those falling below were classified as "low." The median score for femininity was 99 with a range of 65-113. The median score for masculinity was 98 with a range of 70-127. The median splits yielded four gender-typing categories: undifferentiated (low femininity-low masculinity), feminine (high femininity-low masculinity), masculine (low femininity-high masculinity), and androgynous (high femininity-high masculinity). Feminine women and masculine men were classified as traditionally gender-typed; masculine women and feminine men were classified as cross-gender-typed. Breakdowns of men and women, based on these four categories, are presented in Table I.

## RESULTS

Two types of analyses were run. The first examined the relation between gender-related personality characteristics and recall of the stereotyped and counterstereotyped information presented in the television

program. The second examined the relation between one's biological sex and gender-related personality characteristics.

### *Recall of Stereotyped and Counterstereotyped Information*

Recall of the program information was scored for four categories of questions: central-stereotyped ( $n = 11$  maximum), central-counterstereotyped ( $n = 7$  maximum), incidental-stereotyped ( $n = 17$  maximum), and incidental-counterstereotyped ( $n = 2$  maximum). Due to insufficient frequency, incidental-counterstereotyped items could not be analyzed.

Recall responses were scored as correct when memory of the television program content was consistent with the actual program events that had been shown. The correct number of recall responses to central-stereotyped, central-counterstereotyped, and incidental-stereotyped items were submitted, in turn, to a 2 (gender)  $\times$  2 (masculinity: low or high)  $\times$  2 (femininity: low or high) between-subjects analysis of variance (ANOVA).

Contrary to expectation, the three-factor ANOVA yielded no significant effects for recall of central or incidental stereotyped information. That is, both men and women, regardless of levels of masculinity and femininity, recalled about the same amount of stereotyped information from the television program.

The three-factor ANOVA computed on adults' recall of central-counterstereotyped information yielded a feminine level by masculine level interaction,  $F(1, 72) = 4.08, p < .05$ , and a feminine level by gender interaction,  $F(1, 72) = 3.97, p < .05$ . As predicted, a planned comparison revealed that gender-aschematic (i.e., androgynous and undifferentiated) adults recalled significantly more counterstereotypical information than did gender-schematic (i.e., feminine and masculine) adults, with means of 5.44 ( $SD = 1.58$ ) and 4.80 ( $SD = 1.19$ ), respectively.

The Femininity  $\times$  Gender interaction is presented in Table II. Duncan's test revealed that men who scored high in femininity recalled more counterstereotypical information than did women who scored high in femininity. There was also a trend for men who scored high in femininity to recall more counterstereotypical information than did men who scored low in femininity.

### *Gender and Gender-Related Personality Characteristics*

Pearson product-moment correlations were computed between a person's gender and their masculinity and femininity scores. Men were coded as 1; women were coded as 2. Continuous scores from the BSRI were used



**Table II.** Mean Number of Central-Counterstereotypical Items Recalled as a Function of Femininity Level and Gender<sup>a</sup>

	Females			Males		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Low femininity	17	5.06	1.48	22	4.91	1.17
High femininity	23	4.78 <sub>b</sub>	1.31	18	5.83 <sub>a</sub>	1.58

<sup>a</sup> Means with different letter subscripts are significantly different at  $p < .05$ .

to index masculinity and femininity. Interestingly, there was no significant relation between gender and traditional indices of gender typing. The correlation between gender and femininity was  $r = .08$ ,  $p = .47$ . The correlation between gender and masculinity was  $r = -.14$ ,  $p = .23$ .

## DISCUSSION

The purpose of this study was to examine the relation between a person's gender characteristics and their memory of gender-related televised information. As predicted, gender-aschematic individuals recalled significantly more counterstereotypical information than did people who were gender-schematic. These findings are consistent with the schematic processing model in that gender-typed people tended to forget or distort information that was incongruent with their gender schemas more so than nongender-typed people did (Halverson & Martin, 1983). Androgynous and undifferentiated adults demonstrated the most accurate memory of counterstereotypical information, presumably because they are gender-aschematic and do not encode, organize, or distort information via gender schemas.

All groups performed equally well in their recall of traditionally stereotyped information. In American society, it seems, everyone knows gender stereotypes and gender role prescriptions for both males and females. Such findings are consistent with gender-schematic processing in that children "invariably learn [their] society's cultural definitions of femaleness and maleness" (Bem, 1983, p. 603; Halverson & Martin, 1983). These schemas are obviously retained by adult members of society as well. Bem (1983) speculates that gender is perhaps the dichotomy in human experience with the most expansive network of associations.

High femininity in men was associated with preferential recall of counterstereotypical information whereas in women, high femininity was

associated with poor recall of that same information. Put another way, nontraditional men remembered counterstereotypical information better than did traditional women. The past few decades have demonstrated the functional value of nontraditional gender roles for women (Huston, 1983). Men may be currently experiencing similar shifts in personality characteristics. Clearly the male role has traditionally been favored in American society. Thus men have received the strongest reproaches and disapproval for deviating from the traditional male gender role (Martin, 1990). Perhaps more men are developing qualities that are highly adaptive, but have been labelled as feminine and as gender inappropriate in the past. For these reasons, nontraditional men may be particularly aware of, and sensitive to, nontraditional portrayals of the genders.

The argument that men and women have become less likely to use gender as the major organizer of personality characteristics is supported by the correlational analyses. Specifically, there was no relation between a person's gender and their masculinity and femininity scores. Men were no more likely to be masculine than were women, and women were no more likely to be feminine than were men. Moreover, there was a relatively equal distribution of men and women who were classified as feminine, masculine, undifferentiated, and androgynous. These findings suggest that there are ongoing changes in contemporary gender roles.

This descriptive study suggests that person characteristics affect what is remembered by television viewers. As found by others (Calvert & Huston, 1987; List *et al.*, 1983; Vidmar & Rokeach, 1974), people who hold stereotyped beliefs tend to remember information that confirms their schemas and dismiss information that might disconfirm them.

In conclusion, gender schemas affect adults' recall of gender-related televised information. For this reason, nontraditional programming may not have the producer-intended effect. What a person brings to a viewing situation may well be more important than what they actually view. Changes in gender schemas are unlikely unless accompanied by concomitant societal changes.

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