This study applied cognitive heuristics theory to the study of gender role stereotyping. Seventy-five high school students viewed magazine advertisements with stereotypical images of women, while fifty others viewed nonstereotypical images. Both groups then responded to statements concerning a woman in a "neutral" photograph. Differences in gender role expectations were found for six of the twelve questionnaire statements, although differences were not consistently related to either gender or experimental treatment. While the effects documented in this experiment were not dramatic, the results provide further evidence that even brief exposure to stereotypical advertisements plays a role in reinforcing stereotypes about gender roles and that what Sandra Bem has described as the lenses of gender lead to differences in the ways males and females cognitively process visual advertising images.

Feminist scholars, political activists, socially conscious consumers, and media practitioners have all expressed concern about the negative effects of female stereotypes in advertising. Of particular concern are advertising images in which women appear as inferior or subservient to men or as engaged in activities considered less important or less valuable to society, particularly in economic and political terms.

Most of the research on women in advertising involves quantitative or qualitative analysis of individual images in the media. Although experimental research that addresses the cognitive effects of these stereotypical representations is rare, even more rare is research that takes into account how gender role socialization impacts the cognitive processing of these images. This study, which falls into the latter category, is based on an experiment involving high school students in a medium-sized Midwestern community.

As parents, teachers, and social scientists all know, male and female children learn about appropriate "masculine" and "feminine" behavior at a very early age. Gender role socialization is a complex process involving an individual's family experience, cultural conditioning, and education. This socialization not only shapes how individuals cognitively assess and create social reality, but also superimposes male-female differences on virtually every aspect of human experience, from modes of dress and social roles to...
ways of expressing emotion and sexual desire. More than a decade ago, Sandra Bem quantitatively documented the individual variability in this socialization process in developing her widely used Bem Sex-Role Inventory (BSRI). In more recent writings, Bem describes how the “lenses of gender” influence the ways individuals socially construct reality and produce (and reproduce) gender traits. Because these “lenses of gender” are embedded in social, political, and economic institutions, she argues, they help to shape gender-based inequalities such as unequal pay and inadequate day care. In this study, we expand upon Bem’s research to argue that these gender lenses also help to shape images used in advertising as well as the ways that individuals cognitively process these images.

Advertising may be a ubiquitous form of communication, but it is only one of many contributors to gender role socialization in American culture. Although it is impossible to judge in precise terms the societal impact of advertising, some estimates place advertising expenditures at more than $400 per person annually in the United States, compared with an estimated per person spending of $17 annually in other industrialized nations such as Canada and Great Britain.

In the barrage of commercial messages that individuals in North America are exposed to daily, advertisers often present certain social ideals rather than life as it is. Advertising messages are created through presentations of idealized, stereotypical portrayals of individuals. Through the use of simplistic images that ignore the complexities of modern lives, stereotypes thus become an essential shorthand through which advertisers can readily communicate a product category and indicate for whom the product is intended. The convenience of using visual shorthand is one reason advertisers use images that fit gender stereotypes. Stereotypes are the foundation of what have been called the “ideologies” of advertising. The “ideal of domesticity” and the “beauty ideal,” for example, provide normative guidelines for portrayals and activities of women as well as men.

Although it is common to find images of women that portray them in trivializing or demeaning ways, it is important to note that not all sexist images are created equally; some images are more misogynistic than others. Pingree, Hawkins, Butler, and Paisley recognized this range of potential offensiveness through the creation of a Consciousness Scale that measures sexism in advertisements on five levels. On that scale, Level I—which features women in the roles feminists consider to be the most blatantly sexist—depicts women as “two-dimensional, nonthinking” decorations while at Level II, the woman’s place “is in the home or in womanly occupations.” At Level III, women may be depicted as professionals, but their first place is still at home. Pingree and her colleagues argue that at Level IV, advertisements avoid stereotypes, acknowledge full equality in the workplace, and avoid the temptation to remind viewers “that housework and mothering are nonnegotiable the woman’s work as well.”

At Level V, advertisements transcend stereotypical categories altogether, with individual men and women viewed “as superior to each other in some respects, inferior in other respects.” Pingree and her colleagues argue that images at Level V rise above the “dogmatism” of Level IV, which communicates a message that “women shall be equal to men.” In fact, Level V seems to call for advertisements that transcend the usual gender boundaries. “Level V is mentioned because the consciousness scale logically requires it, not because Level V images can be found easily in the media,” they write.

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One reason that Level V images are particularly rare is that advertising is presented in a format that allows only one or two images to be presented at a time. This lack of complexity in form makes it difficult to provide the historical context that would lead to an advertisement being coded at Level V.\(^1\)

In contrast to the research about ways that advertising reinforces gender role stereotypes,\(^4\) audience response studies conducted by marketing and advertising scholars have typically sought more effective ways to appeal to women consumers. However, research that does concern itself with media effects suggests a relationship between exposure to advertising messages and reinforcement of attitudes about gender roles.

There is, for example, empirical support for finding a relationship between exposure to gender stereotypes in advertising and the cultivation among viewers of more traditional attitudes toward gender roles. Research suggests that while stereotypical representations may not induce product purchase, they do encourage viewers to internalize the socially constructed image of femininity presented in advertising, thus helping to define femininity and acceptable female roles.\(^5\) In a study of gender role expectations of adolescent females who were exposed to beauty advertisements on television, for example, the results suggested that even “a single, saturated exposure” could affect audience perceptions of social reality immediately after exposure.\(^6\)

Another experiment examined the impact of exposure to gender stereotypical and nonstereotypical magazine advertisements on male and female judgments of women’s abilities. Men who viewed nonstereotypical print advertisements evaluated a slide of a woman portrayed in a “neutral” role higher in the traits of aggressiveness, leadership, analytical ability, rationality, and enjoying complex tasks. However, the evaluations of the perceived attributes of the “nonrole” female by female subjects were not affected by the role portrayed in the advertisement. The researcher concluded that this finding was “consistent with what might be expected if the information provided in the manipulation of sex roles was not relevant diagnostic information.”\(^7\)

A related stream of research has examined media impact on children’s perceptions of gender roles. For example, one study investigated whether fourth- and fifth-grade students tended to be influenced by stereotypical presentations of parents in television commercials and concluded that consistent exposure to stereotyped role portrayals and limited first-hand information about the role led to an increased predisposition to not challenge stereotypical representations on television.\(^8\)

Findings from these studies suggest that the role portrayed by a woman in an advertisement can provide cognitive cues from which a viewer draws conclusions about the woman in the advertisement and then generalizes these characteristics to other women.\(^9\) Thus, a better understanding of how individuals process advertising images can be gained by drawing upon research on social cognition.

Social psychologists have found that persons often make judgments about uncertain events through the use of cognitive mechanisms such as heuristics. These information-processing shortcuts reduce complex problem-solving to more simple judgmental operations, and enable individuals to “make inferences and predictions from what scanty and unreliable data are available.”\(^10\) The representativeness heuristic, for example, helps individuals to make inferences about probability. As Fiske and Taylor note, this
heuristic is a quick, though occasionally fallible, method of estimating probability via judgments of relevancy. . . . The act of identifying people as members of categories, or the act of assigning meaning to actions, is fundamental to all social inference and behavior. . . .21

Meanwhile, the availability heuristic draws upon an individual’s evaluation of the frequency or likelihood of an event based on how quickly instances of associations come to mind. Taylor notes, however, that “it is the ease of retrieval, construction, and association that provides the estimate of frequency or probability, not the sum total of examples or associations that come to mind.”22

Stereotypes, in particular, can play a role in guiding and shaping behavior through an availability bias, with an expectation that a person will engage in a particular behavior having the potential to lead to an inference that a person has engaged in that behavior.23 Although, as Taylor observes, “the use of rules, schemas and personal constructs may lead one to make inferences that an individual who does not share the same cognitive structures would not make,” it is also important to note that socialization leads many individuals to make inferences that are similar because they are based on widely held stereotypes. Both the representative and availability heuristics fit into the social cognition framework often used by social psychologists to explain stereotypes.24

Drawing upon the research cited above, the following hypotheses were developed for the experiment presented in this study:

H1: Even short-term exposure to sex-stereotyped images will affect audience perceptions of gender roles.

H2: Exposure to gender stereotypes in advertising will cultivate among viewers more traditional attitudes toward gender roles.

H3: Because of the “lenses of gender” described in Bem’s scholarship, there will be a statistically significant relationship between the gender of the subjects and the ways in which the subjects draw upon heuristics to cognitively process advertising images that include representation of gender roles.

Method

Subjects of this study were 125 students (59 males and 66 females) of mixed socioeconomic and ethnic backgrounds enrolled in sociology classes taught at a Midwestern high school in a community of approximately 25,000 people. Five classes were used in the study, and each class was randomly assigned to view ten slides of magazine advertisements. Three classes saw advertisements featuring women in stereotypical roles and the other two classes were exposed to advertisements featuring women in nonstereotypical roles. Random assignment of classes was used because there was no reason to expect any differences in the makeup of the classes, given that the five sections were taught by the same teacher who followed an identical curriculum in each section. Although students elected to take the sociology class as part of their social studies requirement, they were randomly assigned to sections of the course. In addition, the five treatment groups used in this study participated in the experiment on the same day and under identical conditions, with the experiment administered at the beginning of the class period.
Students in the first treatment group (seventy-five students in three classes) saw slides of print advertisements that depicted women working with household cleaning products and engaged in food preparation, child care, and the teaching of young children—tasks that place women in the private sphere of home and family where women have traditionally been relegated to do “women’s work.” One advertisement, for example, featured a woman who was checking up on a sick child in the middle of the night, while another advertisement showed a woman who was pouring coffee for some guests at a Christmas party. The slides depicting women in stereotypical roles fit into Level II of the Consciousness Scale for Sexism, which includes portrayals of women in the home or in traditional working roles. None of the advertisements used in this experiment qualified for categorization in Level I, which features women as sexual objects, “dumb blondes,” or victims.

The second treatment group (fifty students in two classes) was shown slides of print advertisements portraying women engaged in nontraditional/nonstereotypical roles. One slide, for example, featured a medical doctor; another showed an engineer. Other slides featured women in outdoor clothing or business suits. These advertisements were categorized as falling into Level IV of the Consciousness Scale for Sexism, which means that the images showed women and men as equally competent in the same roles.

After each group viewed the ten slides, a “neutral” slide was shown to all subjects. This slide featured a photograph of a woman who was dressed casually in a buttoned-down shirt and jeans, and who was not engaged in any obvious task. Students were not provided with information concerning the woman’s occupation, marital status, or anything else about her life.

While this final image remained on the screen, students were asked to respond to a questionnaire that included twelve statements designed to elicit responses about the qualities of the woman in the photograph. Six of the statements were designed to reflect beliefs about traditional or stereotypical roles for women, while the other six were designed to depict women in nonstereotypical or nontraditional roles. A five-point scale was used, with 5 meaning “strongly disagree” and 1 meaning “strongly agree.” A 3 indicated “no opinion.”

Examination of the data was accomplished through analysis of variance (ANOVA) using a 2 x 2 model that considered both treatment group (stereotypical vs. nonstereotypical slides) and gender of the subject (male vs. female) as independent variables. Thirty-one of the fifty-nine males were shown the stereotypical slides, while forty-four of the sixty-six females saw these slides. The twelve statements assessing impressions of the neutral female image served as dependent variables and were each analyzed separately.

Analyses of the six stereotypical statements about the woman in the neutral photograph found five statistically significant differences. These findings are summarized in Table 1.

Items 1, 2, and 4 reflect a difference between the treatment groups viewing the stereotypical and nonstereotypical images. For those measures, students shown the stereotypical images tended to agree somewhat more with the stereotypical statements in reference to the woman in the “neutral” photograph, a finding represented for item 4 concerning the woman’s social role as a mother and housewife. The other two items focused more on the woman’s actions and produced smaller but still statistically significant differences.
### TABLE 1

Mean Responses to Stereotypical Statements by Treatment Group and Subject Gender

<table>
<thead>
<tr>
<th>Nature of Difference</th>
<th>Stereotypical slides</th>
<th>Nonstereotypical slides</th>
<th>p-level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Always gets permission from her husband before getting involved in volunteer work.</td>
<td>2.47</td>
<td>2.92</td>
<td>0.02*</td>
</tr>
<tr>
<td>2. Prefers to let someone else volunteer to be the chairperson of a committee.</td>
<td>2.52</td>
<td>2.94</td>
<td>0.03*</td>
</tr>
<tr>
<td>4. Has two children and is a housewife.</td>
<td>2.52</td>
<td>3.22</td>
<td>0.001*</td>
</tr>
<tr>
<td>5. Likes to read romance novels.</td>
<td>—</td>
<td>—</td>
<td>n.s.</td>
</tr>
<tr>
<td>10. Performs most of the household chores such as cooking all the meals and cleaning for her family.</td>
<td>Boys 2.68</td>
<td>3.75</td>
<td>0.01**</td>
</tr>
<tr>
<td></td>
<td>Girls 3.70</td>
<td>3.77</td>
<td></td>
</tr>
<tr>
<td>11. Spends a part of every afternoon watching soap operas on television.</td>
<td>Boys 3.20</td>
<td>2.71</td>
<td>0.03**</td>
</tr>
<tr>
<td></td>
<td>Girls</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Statistically significant for treatment groups but not gender.
** Statistically significant interaction effect.
** Statistically significant for gender but not treatment groups.

Item 10 also addressed the woman's social role, this time concerning performance of household chores. Interestingly, the measure produced an interaction effect. No real difference appeared for females in the two treatment groups. However, males shown stereotypical images agreed somewhat with this statement, while males shown nonstereotypical images disagreed somewhat. Item 11 produced a gender-related difference, but here females tended to agree that the woman was a regular soap opera viewer, while the males tended to disagree.

Table 2 presents results for the six nonstereotypical statements about the woman appearing in the neutral photograph. Only three of the six statements produced statistically significant differences. For items 8 and 9, both concerning capabilities (organizing a recycling campaign and helping her son with his trigonometry homework), the females tended to disagree somewhat, while the males expressed a neutral opinion. For item 12, which described a woman acting as a criminal lawyer, the group shown the non-stereotypical images tended to support this possibility while the other group disagreed slightly.
TABLE 2
Mean Responses to Nonstereotypical Statements by Treatment Group and Subject Gender

<table>
<thead>
<tr>
<th>Nature of Difference</th>
<th>p-level</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Was a math major in college.</td>
<td>—</td>
</tr>
<tr>
<td>6. Is the owner and operator of a small business.</td>
<td>—</td>
</tr>
<tr>
<td>7. Paints houses for a living.</td>
<td>—</td>
</tr>
<tr>
<td>8. Organized and administered a recycling campaign in her community of approximately 30,000 people.</td>
<td>Boys</td>
</tr>
<tr>
<td></td>
<td>3.05</td>
</tr>
<tr>
<td>9. Often helps her son with his trigonometry homework.</td>
<td>Boys</td>
</tr>
<tr>
<td></td>
<td>2.88</td>
</tr>
<tr>
<td>12. Is a criminal lawyer.</td>
<td>Stereotypical slides</td>
</tr>
<tr>
<td></td>
<td>3.20</td>
</tr>
</tbody>
</table>

* Statistically significant for gender but not treatment groups.
** Statistically significant for treatment groups but not gender.

In this experiment, two of the statistically significant findings were based on the treatment group, three were based on gender alone, and one was based on an interaction effect between gender and treatment. While the effects documented in this experiment were not dramatic, the results supported all three hypotheses and offered further evidence that (1) even brief exposure to an image affects audience perceptions of social reality immediately after exposure; (2) even brief exposure to advertisements that rely upon gender stereotypes reinforces stereotypes about gender roles; and (3) there are differences in the ways males and females cognitively process visual images.

While other studies suggest that males have higher propensities than females to hold onto gender-based stereotypes, the results of this experiment suggest that there are some conditions in which exposure to stereotypical images leads to the reinforcement of gender role stereotypes for both males and females, and other conditions in which the effects are gender specific.

The research about gender socialization provides some possible explanations of the variation in effects. As noted in this study's introduction, a great deal of research has documented the gendered nature of social groups and activities from early childhood through adult life. But the relationship is a complex one, as Bem's research suggests. Neither males nor females are monolithic groups; individuals vary in their adherence to gender roles.

The economic and political differences in power between females and males are also a possible explanation for the statistically significant gender
differences in the results of this experiment. It is reasonable to hypothesize that the results of this study may reflect, among other things, gender differences in access to economic and political resources, and differences in the social and cultural experiences of those in the study.

The results of this study suggest that the process of learning about gender-appropriate behavior and observing the gendered nature of social life may lead to the development of gender-specific heuristics - or seeing the world through gendered lenses. For researchers to understand this aspect of the results, it is useful to draw upon Bem's work as well as Taylor's explanations of the ways in which bias in available data might impact social perception, the information retrieval process, and the development of heuristic devices. Such a bias may work, for example, by making highly salient data that are based on gender differences in life experiences more available to individuals. In turn, availability of access to these salient data may exert a disproportionate influence on the judgment process.

In addition, the "lenses of gender" may interact with enduring cognitive structures such as beliefs and values, fostering "preconceptions that heighten the availability of certain evidence, thus biasing the judgment process." For example, because more females than males watch soap operas, the young women in this study may have a more representative data base than the young men about the gender composition of soap opera audiences. It is reasonable to expect that this ritualistic television viewing behavior prompted more females than males in the study to respond that the woman in the neutral slide was a regular soap opera viewer.

Although females and males exposed to the stereotypical images were more likely to say that the woman in the neutral slide performed most of the household chores, this effect was not as strong for the females as it was for the males. The young men in this study may have more at stake than the young women in preserving such stereotypical images and may draw upon a differently constructed heuristic in cognitively processing information. Deeply embedded cultural values and beliefs about the proper division of labor between men and women may also play into the results of this part of the study. For example, despite women's entry into the paid work force in large numbers, women continue to take responsibility for more household work than men - something that surveys show women are not happy about.

A differently constructed heuristic based on differences in educational experiences may also explain why females were less likely than males to see the woman in the neutral slide as helping her child with trigonometry homework. Studies show that girls are less likely than boys to take upper-level mathematics courses such as trigonometry in high school. It seems reasonable to speculate that first-hand experience would lead the young women in this study to be more aware than the young men of this gendered disparity in math education.

We believe these findings point to some rich areas for further research about the role of heuristics as well as gender role socialization in the development of gender stereotypes. The phrase "gendered lenses," as it is used here, acknowledges the stereotypical images that are common in our culture and also takes note of the ways that a gendered world view frames the ways that those images are cognitively processed and interpreted.

We suggest that future research draw upon a fuller range of stereotypical images than the ones used in this experimental research. Such research could explore more fully the ways that negative effects might be related to the level of sexism represented in the images. As noted in the
literature review of this paper, not all sexist advertising images are created equal. Some sexist images are more sexist than others, and it would be useful for future research to explore the effects of images that fall on various places on the Consciousness Scale for Sexism.

Yet it is noteworthy that statistically significant media effects were documented in this study even though the images used in this experiment were not extreme in their representation of stereotypes. Like the majority of images found in the media, advertisements used in this study fell into Levels II through IV of the Consciousness Scale for Sexism. It seems reasonable to hypothesize that using images of women as sex objects (Level I of the scale) as well as using the nonstereotypical images of Level V would produce greater differences in the treatment groups than were produced when participants were exposed to the Level II, III, and IV images used in this study. Future studies can be expanded to explore how gender role socialization, and the adherence of individuals to gender roles (as measured by the Bem Sex Role Inventory), play a role in the perception of media images such as the ones discussed here.

NOTES


11. William Leiss, Stephen Kline, and Sut Jhally, Social Communication in


14. See Linda Lazier-Smith, The Effect of Changes in Women’s Social Status in Images of Women in Magazine Advertising: The Pingree-Hawkins Sexism Scale Reapplied, Goffman Reconsidered, Kilbourne Revisited (Ph.D. diss., Indiana University, 1988). See also the book by Alice E. Courtney and Thomas W. Whipple, Sex Stereotyping in Advertising (Lexington, MA: Lexington, 1983). This study, which employed content analysis, found four general categories of stertotypical messages about women in advertisements: (1) that a woman’s place is in the home; (2) that women do not make important decisions or undertake important tasks; (3) that women are dependent and require the protection of men; and (4) that women are sex objects who exist for men.


25. All of the women in the advertisements used in this experiment were white. Given the differences in experiences and histories of white women and women of color, the authors believe that racial diversity in images would have made the results more difficult to interpret. More research is needed in this area. See Jane Rhodes, “Falling Through the Cracks: Studying Women of Color in Mass Communication,” in Women in Mass Communication, ed. Pamela J. Creedon, 2d ed. (Newbury Park, CA: Sage, 1993), 24-31.

26. See Tables 1 and 2 for complete item wording.

27. Courtney and Whipple, Sex Stereotyping in Advertising, 58.


