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Psi Chi serves two major goals—one immediate and visibly rewarding to the individual member, the other slower and more difficult to accomplish, but offering greater rewards in the long run. The first of these is the Society’s obligation to provide academic recognition to its inductees by the mere fact of membership. The second goal is the obligation of each of the Society’s local chapters to nurture the spark of that accomplishment by offering a climate congenial to its creative development. For example, the chapters make active attempts to nourish and stimulate professional growth through programs designed to augment and enhance the regular curriculum and to provide practical experience and fellowship through affiliation with the chapter. In addition, the national organization provides programs to help achieve these goals, including national and regional conventions held annually in conjunction with the psychological associations, research award competitions, certificate recognition programs, national and regional chapter awards, and national service projects.

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The twofold purpose of the Psi Chi Journal of Undergraduate Research is to foster and reward the scholarly efforts of undergraduate psychology students as well as to provide them with a valuable learning experience. The articles published in this journal represent primarily the work of the undergraduate student(s). Faculty supervisors, who deserve recognition, are identified by an asterisk next to their name.

Since the articles in this journal are primarily the work of undergraduate students, the reader should bear in mind that: (1) the studies are possibly less complex in design, scope, or sampling than professional publications and (2) the studies are not limited to significant findings. The basis for accepting papers for publication is the agreement among three professional reviewers that the project, hypothesis, and design are well researched and conceived for someone with an undergraduate level of competence and experience.

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The Psi Chi Journal of Undergraduate Research encourages undergraduate students to submit manuscripts for consideration. Submissions are accepted for review on an ongoing basis. Although manuscripts are limited to empirical research, they may cover any topical area in the psychological sciences.

1. The primary author of a submitted manuscript must be an undergraduate student who is a member of Psi Chi. Manuscripts from graduate students will be accepted only if the work was completed as an undergraduate student. Additional authors other than the primary author may include non-Psi Chi students as well as the faculty mentor or supervisor. Membership verification information for the primary author must be included.

2. Only original manuscripts (not published or accepted for publication elsewhere) will be accepted.

3. All manuscripts must be prepared according to Publication and Manual of the American Psychological Association (4th ed.).

4. What to submit:
   a. Four copies of the complete manuscript. Near-letter-quality print is required on all copies. Should you desire a masked (blind) review, make sure that identifying names, affiliations, etc. appear only on the title page and nowhere else on the manuscript; i.e., manuscripts should be reasonably free of clues to the identity of the authors. Footnotes that identify the author(s) should appear on a separate page. You must request masked review.
   b. A self-addressed, stamped postcard to acknowledge receipt of your manuscript.
   c. A self-addressed envelope with sufficient postage for the return of your manuscripts when an editorial decision has been reached.
   d. A sponsoring statement from the faculty supervisor who attests: (1) that the research adhered to APA ethical standards; (2) that the supervisor has read and critiqued the manuscript on content, method, APA style, grammar, and overall presentation; and (3) that the planning, execution, and writing of the manuscript represent primarily the work of the undergraduate student.

Submit all manuscripts to: Dr. Stephen F. Davis, Managing Editor Psi Chi Journal of Undergraduate Research Department of Psychology Emporia State University Emporia, KS 66801

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WHEW! YOU JUST FINISHED YOUR HONORS thesis/senior project and presented the largest paper you have ever written to your advisor. Every time you thought you had covered “all the bases,” your advisor had one more person’s research to include in your paper or one more table or graph that could explain a marginally significant statistical effect. Thirty pages and 16 tables and graphs later, you are on your way to celebrate. At your celebration, you run into your advisor who informs you that after reading through your paper, the department is convinced you should submit it to a journal for possible publication. They assure you that this piece of work is the best they have seen (and it is, of course!) and that chances are good it is publishable. Now your friends are impressed and you are excited. You select a journal that publishes undergraduate student research papers and send off your honors thesis/senior project.

What happens next? Your project arrives at the journal office. The journal editors know that what has been received is a “documentary.” Every piece of information that relates to the topic in any way has been included within the paper. This format is appropriate for your honors thesis/senior project, and your advisor was correct in demanding that you trace the historical events that lead up to the hypothesis of your project. So why isn’t a documentary the correct format for a journal article?

Journal articles are much more like a “sitcom.” You need to make every second and every word count, and you have to attract an audience to your project or you can’t market (publish) the piece. Your advisor must read your honors thesis/senior project, but journal reviewers and readers of the journal are under no such mandate. Therefore, you need to tighten up your documentary and eliminate parts and pieces that are nice but not necessary for your new audience. Sitcoms must move forward at a rapid pace to attract an audience that is “channel surfing” and so must your project if it is to become a published journal article. So, how do I turn my documentary into a sitcom?

Just as there are many types of sitcoms, there are many ways to convert your honors thesis/senior project into a journal article. The first thing to realize is that because your audiences are different for the two pieces, you do need to revise the original project. Several components of the documentary are not needed in the sitcom. The historical review must be tightened up. Only include past research that specifically addresses your research hypotheses. Earlier research is often cited in a sentence like, “Prior research has shown that . . . relevant literature).”

Think about a story line for your sitcom. What are the lines that will open your show, set the stage, move the plot, and conclude the program? Be aware that each line and each word must convey concise meaning as your “producers” need to get the most...
for their “investment.” Look at the “dialogue”; is it repetitive? Repetitive lines can be eliminated. Is a line boring?; how can you rephrase it to maintain the interest of your reader? Have you used words repeatedly?; try to utilize synonyms. Save the abstract for the last, and then give it your best effort. Your opening line in the abstract is the most important sentence in your entire manuscript. Think of the abstract as the “promo clip” used to attract the attention of a potential audience.

Prior to sending your manuscript to the journal, have it read critically by friends and colleagues. (Notice that we have transformed an honors thesis/senior project into a manuscript at this point.) Colleagues (i.e., professors) can work with you on style and content, but friends that say “I’m sure it’s good, but I don’t understand it” also give you vital information. Your manuscript should be readable by an educated person, even if they are not immersed in the same field. Ask these individuals what they do not understand, and you will have insight into how to fine-tune your manuscript. You do not have to agree with the specific comments these critical readers make, but you need to address the areas of the manuscript that cause them difficulty.

One final transformation. Which tables and graphs do you keep, and which ones do you take out of your final manuscript? Tables and graphs are costly in a manuscript unless they save space in the text. Think about using one graphic to show several important pieces of data. Decide what types of information are best presented in a visual form and which ones are best presented in a verbal form. In this way your text and graphics complement each other and facilitate understanding your article. (Notice that now we are describing an article, a piece ready for final formatting and publication.)

Is my project worth all of this transformation and the effort it will require on my part? The answer to this question is complicated. If your project is an original piece of work with significant results, yes, the effort is worth it. If it is only a pilot study and needs further research to “tell the story,” then you need to consider what the effort will produce for you. Am I planning on graduate school? Will this effort help me get into graduate school? Is there any possibility of this piece being accepted by the journal to which I plan on submitting the manuscript? It might be worth your time and trouble to discuss these issues with members of your faculty. Additionally, it is always possible to call the editor of the journal and briefly ask if your project has the potential for publication in the journal you have selected.

Good luck with your project on its journey to becoming an article. The adventure is an exciting one, even if it is frustrating at times!
MUCH RESEARCH HAS BEEN CONDUCTED ON the effects handicapped children have on parents’ adaptive functioning and parenting styles (see Bradley, Rock, Whiteside, Caldwell, & Brisby, 1991; Frey, Greenberg, & Fewell, 1989; Holmbeck et al., in press; Rodger, 1987; Wallander, Varni, Babani, Banis, & Wilcox, 1988, 1989). Similarly, research has also examined the effect socioeconomic status (SES) has on parents’ functioning (see Kohn, 1969; Kohn & Schooler, 1983). Relatively little work has been done on whether SES level affects how parents interact with a handicapped child. This study was designed to examine whether the degree of democratic parenting varies as a function of SES level and spina bifida status.

Spina bifida is a common birth defect, with a ratio of about 2 in every 1,000 live births (Varni & Wallander, 1988). The defect is caused by an incomplete closure of the spine, called a lesion. The lesion can be located anywhere along the spinal column, and the higher up on the spinal cord the lesion is, the greater the extent of the disability. Some common secondary conditions that can occur as a result of the lesion are paralysis of the lower extremities, neurogenic incontinence, and hydrocephalus (i.e., water on the brain; Wills, 1993). Although, in years past, the survival rate for children born with spina bifida has been low, medical and surgical advances have now improved survival rates to levels exceeding 85% (Wallander, Feldman, & Varni, 1988).

Stress on the parents of a child with spina bifida can begin immediately with the birth of the child. Because spina bifida is diagnosed at birth, the parents know immediately that something is wrong with their child. The baby often endures surgery at birth, which can leave parents feeling traumatized, especially if...
they have not been given a satisfactory explanation of the diagnosis (Varni & Wallander, 1988). This surgery can result in separation from the parents for 2 to 10 weeks following birth. Mothers of children with spina bifida have reported this separation as being a very difficult time (Walker, Thomas, & Russell, 1971).

Once the child is home, parents are often unsure of how to care for their child, who may need more specialized care or require more hospital or clinic visits than a nonhandicapped child (Varni & Wallander, 1988). Also, parents may have to rethink their hopes and expectations for the child, and they may need to form appropriate standards of comparison for the child and for themselves as parents (Frey et al., 1989). Frey et al. found the comparative frame of reference used by parents to evaluate themselves and their child to be an important moderator of parental stress and coping. Parents who compare their handicapped child to nonhandicapped children often come to see the handicap more negatively than parents who adjust their frame of reference to include a wider variety of positive characteristics (e.g., resilience, a sunny personality).

One result of the child’s need for more rigorous and specialized care is that one parent often becomes the primary caregiver while the other is the primary wage earner; traditionally, mothers often become the caregivers and fathers the wage earners (Frey et al., 1989; Rodger, 1987). Having one primary caregiver may be necessary considering the difficulty and expense involved in hiring someone to care for a child who is physically handicapped. One reason fathers may take on the role of primary wage earner is that, traditionally, fathers have tended to interact with their children on a more physical, playful level than mothers, who traditionally have done more of the routine, day-to-day child rearing. In the case of a severely handicapped child, the opportunities for physical play can be limited, perhaps causing frustration for some fathers (Frey et al., 1989).

Stressors such as the ones described above can affect parenting style and the quality of parenting. Bradley et al. (1991) found that in families with a handicapped child, parenting quality was significantly related to the number of stressors families experience as well as the severity of the child’s disability. Over time, parents whose coping strategies are less adaptive appear to provide lower quality parenting.

With respect to parenting, this study asks: How does raising a child with spina bifida affect the level of democratic parenting (i.e., parenting which permits children to express their opinions about important family concerns; Holmbeck, Paikoff, & Brooks-Gunn, 1995; Maccoby & Martin, 1983; Steinberg, 1990)? As stated earlier, parents of a handicapped child experience stressors that parents of a nonhandicapped child do not (Holmbeck et al., in press). Further, families of children with spina bifida tend to be more tightly knit and controlling than families with able-bodied children (Varni & Wallander, 1988). Such increased parental control in these families may occur in part because of the need to follow complex and time-consuming medical regimens (Holmbeck et al., 1996) and because of increased safety concerns on the part of parents with handicapped children. Thus, we expected parents of physically disabled children to permit less child input in matters of importance to the family (i.e., they are expected to be less democratic in their parenting style) than parents of able-bodied children.

We also asked: How does SES impact the type of parenting style employed? In this study, SES was based on a composite of occupation, education level, gender, and marital status, using the Hollingshead Four Factor Index of Social Status (1975). Prior research done on the question of how SES affects parenting styles has found that middle-class parents are more likely to be democratic; that is, they tend to emphasize children’s self-direction and input in decision making, whereas working-class parents tend to value their children’s conformity to external authority (Kohn, 1969). For example, parents at lower SES levels tend to value children’s quick obedience to parents’ wishes rather than discussing with the child alternate ways of complying with those wishes.

Though research indicates lower-class parents tend to use more parent-centered, authoritarian approaches to child rearing and discipline than middle-class parents, there may be very practical reasons behind such variation in parenting. Lower-class parents may expect children to respond obediently because, if they do not, there may be a good chance they could get involved in antisocial activities (e.g., gang-related activities) more readily than a middle-class child (Kelly, Power, & Wimbush, 1992). Therefore, an authoritarian style of parenting is not only desirable, but in some cases may be a matter of survival.

We were also interested in the joint effect of SES level and the presence or absence of a handicapped child on democratic parenting styles. That SES level is related to how well handicapped children adjust to their environment has been found in a study by Wallander, Varni, et al. (1988). These researchers were interested in measuring the psychological adjustment of children with chronic physical disorders. Specifically, they asked if adjustment differed between children with chronic physical disorders versus children in a control sample, and whether SES level
played a role in the children’s adjustment. These investigators found that, on average, the handicapped children had significantly more behavior problems and lower social competence than the control children. The researchers also found that “. . . the significant differences noted between the chronically ill and handicapped children and the normative sample of community children were mainly due to chronically ill and handicapped children from lower SES families” (p. 205). Although this study was not without limitations (e.g., the reliance on mothers as the only reporters of their child’s adjustment, the slight overrepresentation of families from lower SES levels), this result suggests low SES levels and the presence of a handicapped child may have an additive impact on parenting behaviors (i.e., both conditions together would have a greater impact on parenting behavior than either condition alone).

Thus, it was hypothesized that high SES parents would tend to have more democratic/child-centered parenting styles than low SES parents. Similarly, control-group parents were expected to have more democratic/child-centered parenting styles than spina bifida parents. Taking into account both SES and group status, high SES control parents were expected to exhibit the most democratic/child-centered parenting; high SES spina bifida parents were expected to be next; low SES control parents third; and low SES spina bifida parents were expected to exhibit the least amount of democratic parenting.

Method

Participants

One hundred ten families were studied: 55 control families and 55 families having a child with spina bifida. The spina bifida participants were recruited from several Chicago-area hospitals. A recruitment letter was sent to all parents of children from these hospitals who were either 8 or 9 years old. The control participants were recruited by contacting schools where the children with spina bifida were enrolled, and were matched with the spina bifida participants on 13 demographic variables: child age, child sex, child ethnicity, birth order, family structure, mother and father education, mother and father report of family income, mother and father age, and mother and father ethnicity. Although natural mothers from all families from both groups participated in the study, only 43 fathers or stepfathers participated in each group. The families were divided into high and low SES groups using a median split.

Information on a number of physical status variables for the spina bifida group were obtained based on maternal report and/or from information gleaned from the child’s medical chart (spinal lesion level: 27% sacral, 53% lumbosacral or lumbar, 11% thoracic, 9% missing data; spina bifida type: 86% myelomeningocele, 9% lipomeningocele, 5% missing data; shunt status: 73% shunt, 27% no shunt; ambulation: 22% no assistance, 27% assistance with braces, 51% assistance with braces and crutches, walker, and/or wheelchair). A comparison of participating children with spina bifida with children from families that declined to participate (n = 54) revealed no differences with respect to lesion level, χ²(2) = 3.17, p > .05, or type of spina bifida (myelomeningocele vs. lipomeningocele), χ²(1) = 2.89, p > .05.

Procedure

Families were invited to participate in a 2–3 hr family assessment session in their home, which was conducted by a two-person research team comprised of graduate and undergraduate students. Before administering these sessions, research team members received approximately 15 hr of training. After the parents and child signed informed consent blanks and release of information forms, they were asked to complete a set of questionnaires as well as 1 hr of audiotaped and videotaped family interaction tasks, for which they were paid $50. With the exception of the demographic and medical chart data, only data from the videotaped family interaction tasks were used in this study.

Measures

SES was measured using the Hollingshead Four Factor Index of Social Status (1975). This index uses education, occupation, sex, and marital status to construct a measure of social status.

Families completed five interaction tasks, which were videotaped by the research assistants during the course of the interview. These tasks included a word puzzle, a block design task, a conflict/discussion task, a discussion of possible family activities, and a board game task. In this study, only data from the game task were examined. This task presents the family with an unfamiliar board game and instructs them to make up their own rules to play the game. The only stipulation was that they were to try to use all the different types of game pieces provided. The family was given 10 min to play.

For all families, parental behavior on the videotape was rated by two undergraduate- and/or graduate-level coders, who received 10 hr of training before beginning the coding. The coders watched the game task for each family in its entirety prior to completing a coding form containing 82 different variables pertaining to the family interaction (based on a manual
TABLE 1
Comparisons Between Groups on Matching Variables (n = 55 in each group)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Spina Bifida M (SD) or n</th>
<th>Control M (SD) or n</th>
<th>t value</th>
<th>chi-square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother Age</td>
<td>37.33 (5.10)</td>
<td>37.20 (4.54)</td>
<td>.14</td>
<td></td>
</tr>
<tr>
<td>Father Age</td>
<td>40.44 (5.34)</td>
<td>39.29 (5.47)</td>
<td>.97</td>
<td></td>
</tr>
<tr>
<td>Child Age</td>
<td>8.38 (.49)</td>
<td>8.36 (.49)</td>
<td>.20</td>
<td></td>
</tr>
<tr>
<td>Birth Order</td>
<td>2.11 (1.27)</td>
<td>2.11 (1.33)</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>Mother Education</td>
<td>5.55 (1.58)</td>
<td>6.67 (1.40)</td>
<td>–3.83*</td>
<td></td>
</tr>
<tr>
<td>Father Education</td>
<td>5.67 (1.71)</td>
<td>6.78 (1.95)</td>
<td>–2.72*</td>
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</tr>
<tr>
<td>Family Income (M)</td>
<td>5.36 (2.78)</td>
<td>5.45 (2.44)</td>
<td>–.19</td>
<td></td>
</tr>
<tr>
<td>Family Income (F)</td>
<td>6.02 (2.61)</td>
<td>6.15 (2.28)</td>
<td>–.23</td>
<td></td>
</tr>
<tr>
<td>Mother Race (n)</td>
<td></td>
<td></td>
<td>.15</td>
<td></td>
</tr>
<tr>
<td>white</td>
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<td>other</td>
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<tr>
<td>missing</td>
<td>13</td>
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<tr>
<td>Child Race (n)</td>
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<td>white</td>
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<td>Child Gender (n)</td>
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<td>0</td>
<td>1</td>
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<tr>
<td>Family Structure (n)</td>
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<tr>
<td>intact</td>
<td>41</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>nonintact</td>
<td>14</td>
<td>17</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. M = mother report; F = father report. Family Income is based on a scale that is divided into $10,000 increments: Level 1 = $10,000 or less per year; Level 2 = $10,000–$20,000; and so on to Level 11 = over $100,000 per year. Intact = natural, 2-parent families.

*p < .05

developed by Holmbeck, Belvedere, Gorey-Ferguson, & Schneider, 1995, which was based on a coding system developed by Smetana, Yau, Restrepo, & Braeges, 1991).

Mother, father, and child behaviors were rated separately (although some codes were also dyadic or referred to the family as a whole; e.g., level of conflict within the mother-child dyad, the degree of impairment in the family as a whole). We chose not to combine ratings of mothers and fathers given findings in the literature which suggest that mothers and fathers may parent differently (e.g., mother is democratic, father is authoritarian) in the same family (Johnson, Shulman, & Collins, 1991). The 82 codes were divided as follows: mother codes (22 codes), father codes (22 codes), child codes (16 codes), dyadic codes (16 codes), and whole family codes (6 codes). The codes covered the interactional style of the family members (e.g., mother listens to others), the degree of conflict exhibited (e.g., mother frequently disagrees with others), the quality of affective expression (e.g., maternal warmth), the degree of control displayed by family members (e.g., overt power displayed by mother), child-centered and collaborative problem solving (e.g., maternal structuring of task), and whole family measures (e.g., the degree of depression, sadness, and hopelessness expressed by the family). Five-point Likert-type scales were used to rate the behavior of family members (e.g., for the code “listens to others,” the ratings could range from “almost never” to “almost always”).

As defined in the literature (e.g., Holmbeck, Paikoff et al., 1995; Maccoby & Martin, 1983;
Steinberg, 1990), democratic parents are those who elicit children’s input, consider children’s opinions before making a decision, and foster children’s independence. On the other hand, it was assumed that parents with authoritarian styles would tend not to ask children for input. These parents were expected to make decisions for their children and expect obedience. Based on these definitions of democratic and authoritarian parenting, we selected 14 of the 82 variables from the coding manual that assessed these parenting styles (i.e., 68 of the 82 variables were not employed in this study).

The 14 variables consisted of ratings of parents’ behaviors and were drawn from the following six code types: (a) Listens to Other Family Members (manifested through verbal and/or nonverbal responses indicating listening; 2 codes = mother, father), (b) Requests Input from Other Family Members (parent shows clear interest in including others in interaction; 2 codes = mother requests input from child, father requests input from child), (c) Receptive to Statements Made by Other Family Members (parent is open to other’s thoughts, ideas, and feelings; 2 codes = mother receptive to child, father receptive to child), (d) Attempted Resolution of Issues (parent demonstrates flexibility and interest in resolving differences; 2 codes = mother, father), (e) Nature of Parental Control (Authoritarian and Democratic) (4 codes = mother [authoritarian], father [authoritarian], mother [democratic], father [democratic]), and (f) Parental Promotion of Dialogue and Collaboration (parent provides a type of structure where decision making is shared between parent and child; 2 codes = mother, father). These six code types are all measures of democratic parenting, with the exception of Nature of Parental Control (Authoritarian).

Data Analysis
Data from this study were analyzed using 2 × 2 analyses of variance. The two independent variables were SES level (divided into either high or low based on a median split), and the presence or absence of a child with spina bifida. The dependent variables were the 14 parenting behaviors, as measured by the codes discussed above.

Results
Reliability
Inter-rater reliabilities were calculated to determine the reliability of the dependent measures used in this study. The percentage of agreement was computed across all families (“agreement” was assumed if the two ratings were within 1 rating point on a 5-point Likert-type scale) and ranged from 79% to 99% (M = 91%). Intraclass correlations were also computed (Shrout & Fleiss, 1979); such correlations are similar to alpha coefficients and take into account the fact that two raters coded all the tapes. The intraclass correlations ranged from .63 to .79 (M = .68).

Comparisons Between Groups
Before carrying out the analyses of variance, t tests and chi-square analyses were run to determine if the control and spina bifida groups were well matched on the demographic variables. As shown in Table 1, no t tests achieved significance (p > .05), except for mothers’ and fathers’ education. For the control group, the average educational level was between the four-year college level and graduate or professional training level. The average educational level for the spina bifida group, however, fell between the partial college level and the four-year college level. Additionally, race by group, child gender by group, and family structure by group chi-square tests were not found to be significant (p > .05). The nonsignificance of both the chi-square tests and the majority of the t tests suggest a good matching of the groups overall.

Analyses of Variance and Tests of Hypotheses
A series of 2 × 2 analyses of variance was run using the independent variables of SES level (high or low) and the presence or absence of a child with spina bifida. The 14 observational variables described earlier were utilized as dependent variables.

As can be seen in Table 2, a significant interaction effect between SES (high vs. low) and group (control vs. spina bifida) was found for Mother Receptive to Statements made by Child, F(1, 103) = 7.39, p < .01. Based on post hoc tests (Duncan Multiple Range Tests), mothers in the high SES spina bifida group were significantly more receptive to statements made by their child than mothers in the low SES spina bifida and high SES control groups. A main effect between low and high SES levels was found for Father Attempts Resolution of Issues, F(1, 79) = 3.88, p < .05. In this case, the high SES group scored significantly higher than the low SES group.

Main effects for SES and group were found for Nature of Parental Control–Authoritarian (Mother), F(1, 103) = 4.46, p < .05 and F(1, 103) = 4.33, p < .05, respectively. The spina bifida group scored significantly higher than the control group on this measure, and the low SES mothers scored significantly higher than the high SES mothers. However, these main effects were qualified by a significant SES by group interaction effect, F(1, 103) = 6.23, p < .01. Follow-up analyses revealed that the low SES spina
TABLE 2

Means, Standard Deviations, and Significant Effects

<table>
<thead>
<tr>
<th>Variable</th>
<th>Low SES</th>
<th></th>
<th>High SES</th>
<th></th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Spina Bifida</td>
<td>Control</td>
<td>Spina Bifida</td>
<td>Control</td>
<td></td>
</tr>
<tr>
<td>Listens to Other Family Members</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>3.95 (63)</td>
<td>4.28 (68)</td>
<td>4.38 (51)</td>
<td>4.30 (54)</td>
<td></td>
</tr>
<tr>
<td>Father</td>
<td>3.95 (62)</td>
<td>4.07 (82)</td>
<td>4.28 (65)</td>
<td>4.09 (67)</td>
<td></td>
</tr>
<tr>
<td>Requests Input from Other Family Members</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother from Child</td>
<td>3.62 (96)</td>
<td>3.93 (80)</td>
<td>3.85 (69)</td>
<td>3.88 (71)</td>
<td></td>
</tr>
<tr>
<td>Father from Child</td>
<td>3.04 (83)</td>
<td>3.43 (1.05)</td>
<td>3.14 (95)</td>
<td>3.54 (85)</td>
<td></td>
</tr>
<tr>
<td>Receptive to Statements by Other Family Members</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother to Child</td>
<td>3.58 (87)</td>
<td>3.88 (57)</td>
<td>4.20 (62)</td>
<td>3.77 (55)</td>
<td>$S \times G^{**}$</td>
</tr>
<tr>
<td>Father to Child</td>
<td>3.45 (75)</td>
<td>3.60 (69)</td>
<td>3.94 (76)</td>
<td>3.62 (62)</td>
<td></td>
</tr>
<tr>
<td>Attempted Resolution of Issues</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>4.04 (76)</td>
<td>4.10 (56)</td>
<td>4.25 (60)</td>
<td>4.20 (71)</td>
<td></td>
</tr>
<tr>
<td>Father</td>
<td>3.64 (66)</td>
<td>3.73 (1.00)</td>
<td>4.08 (71)</td>
<td>3.95 (67)</td>
<td>$S^*$</td>
</tr>
<tr>
<td>Nature of Parental Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother (Authoritarian)</td>
<td>2.44 (1.18)</td>
<td>1.62 (95)</td>
<td>1.60 (60)</td>
<td>1.68 (70)</td>
<td>$S^* G^* S \times G^{**}$</td>
</tr>
<tr>
<td>Father (Authoritarian)</td>
<td>1.70 (68)</td>
<td>1.63 (74)</td>
<td>1.50 (89)</td>
<td>1.73 (88)</td>
<td></td>
</tr>
<tr>
<td>Mother (Democratic)</td>
<td>2.86 (99)</td>
<td>3.48 (98)</td>
<td>3.72 (72)</td>
<td>3.41 (82)</td>
<td>$S^* S \times G^{**}$</td>
</tr>
<tr>
<td>Father (Democratic)</td>
<td>2.93 (79)</td>
<td>3.37 (1.14)</td>
<td>3.61 (99)</td>
<td>3.23 (95)</td>
<td></td>
</tr>
<tr>
<td>Parental Promotion of Dialogue and Collaboration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>3.03 (1.00)</td>
<td>3.57 (95)</td>
<td>3.66 (91)</td>
<td>3.59 (86)</td>
<td></td>
</tr>
<tr>
<td>Father</td>
<td>2.68 (87)</td>
<td>3.13 (1.26)</td>
<td>3.22 (1.11)</td>
<td>3.21 (93)</td>
<td></td>
</tr>
</tbody>
</table>

Note. SES = socioeconomic status; $S = \text{SES}$ (high vs. low); $G = \text{group}$ (spina bifida vs. control). All values are means of Likert-scale ratings (possible range = 1–5). See text for F and p values.

* $p < .05$  ** $p < .01$

bifida mothers had significantly higher Authoritarian scores than did mothers from the other three groups.

Additionally, a main effect for SES was found for Nature of Parental Control—Democratic (Mother), $F(1, 103) = 4.84, p < .05$, for which the high SES group scored significantly higher than the low SES group. This main effect was qualified by a significant interaction effect, $F(1, 103) = 6.86, p < .01$. For this measure, the low SES spina bifida group scored significantly lower than the other three groups.

Discussion

The present study investigated the effect of SES and the presence or absence of a child with spina bifida on democratic parenting styles. Because the low SES spina bifida group scored lower than other groups on several measures and higher than the other groups on a measure of authoritarian parenting, the primary conclusion of this study is that families with both a low SES level and a child with spina bifida seem to be affected more than families who have only one or neither of these potential stressors (low SES or a child with a chronic physical disorder), at least with respect to the amount of democratic parenting present in the family.

Significant main effects and/or interactions were found for 4 of the 14 variables examined. In accordance with previous research (see Bradley et al., 1991; Frey et al., 1989; Kohn, 1969; Lempers, Clark-Lempers, & Simons, 1989; Rodger, 1987) and the hypotheses of this study, the high SES groups tended to score higher on measures of democratic parenting (or lower on measures of authoritarian parenting) than the low SES groups, and the spina bifida group scored higher than the control group on authoritarian parenting. Additionally, there were several SES by group interactions effects. Consistent
with the research hypotheses, post hoc tests revealed that the low SES spina bifida group scored lower than the other three groups on Nature of Parental Control–Democratic (Mother) and higher than the other groups on the measure of Nature of Parental Control–Authoritarian (Mother).

Although four of the variables yielded significant findings, this study’s research hypotheses were not completely borne out by the analyses. For all of the measures of democratic parenting, it was hypothesized that high SES control families would score the highest, followed by high SES spina bifida families, low SES control families, and finally low SES spina bifida families. The analyses revealed no significant differences between the groups in exactly this order.

More consistent with the hypotheses, however, was the finding that the low SES spina bifida group scored lower than the other three groups on measures of democratic parenting. As well, this group scored the highest on the measure of Authoritarian Parental Control (Mother). These findings are consistent with the hypothesis that the low SES spina bifida group would score lowest on measures of democratic parenting and highest on the measure of authoritarian parenting. These findings are also similar to those that emerged in Wallander, Varni, et al.’s 1988 study of chronically ill and handicapped children. These investigators found that differences between the pediatric sample and the control sample were due mainly to the ill and handicapped children being from lower SES families. It seems possible the dual stressors of low SES and the presence of a handicapped child exert a larger influence on parenting styles than just one of the stressors alone.

In the present study, the finding that the low SES groups scored lower on measures of democratic parenting than the high SES groups relates to a study by Lempers et al. (1989), who found stressful economic conditions were likely to promote parenting that was less nurturant and more parent-centered or authoritarian. Additionally, Bradley et al. (1991) found SES level underlies the relationship between many ecological factors (such as social support, stress, and coping styles) and parenting in families with handicapped children. This study’s finding that the spina bifida group scored higher than the control group on measures of authoritarian parenting is congruent with speculations by Varni and Wallander (1988), who reported families of children with spina bifida tend to be more tightly knit and controlling than control families.

Although several variables were found to yield significant findings, caution should be used in interpreting these results, as this study is not without limitations. One limitation is the large number of statistical analyses that were utilized. Forty-two statistical tests were run (14 variables by three statistical tests; i.e., two main effects and one interaction), seven of which were found to be significant. Of these significant findings, only two were expected due to chance (Kirk, 1982).

In the future, researchers may wish to look at other psychosocial variables, such as coping strategies or marital satisfaction, which may have an impact on parenting styles. Future research should also take into account that the dependent variables used in this study have not been previously tested. It is possible some of the variables utilized in the study are not valid measures of democratic parenting style. Further refinement of these variables may help to clarify the associations between SES, the presence of a handicapped child, and parenting styles.

References
Parenting of Preadolescents With Spina Bifida

Seefeldt et al.


Research has shown drink preference to be a factor in consumption rates of alcoholic beverages (Kidorf, Lang, & Pelham, 1990; Snortum, Kremer, & Berger, 1987). Snortum et al. (1987) have suggested the connotations of manliness and drunken excess given to beer drinkers provide subtle social reinforcements that promote alcohol use and abuse. Kidorf et al. (1990) noted women’s self-reports of consumption were poorly correlated with drinking under laboratory conditions, and women may actually be more restrained when consuming alcohol in the form of mixed drinks in a naturalistic social setting.

Several studies have attempted to establish a relationship between alcohol consumption and specific demographics which may be factors related to alcohol consumption (Hunter, Hannon, & Marchi, 1982; Kidorf et al., 1990; Plant, Kreitman, Miller, & Duffy, 1977; Snortum et al., 1987; Sykes, Rowley, & Schaeffer, 1993). These studies found alcohol consumption to be greater for men than for women, whereas other studies have shown an opposite relationship between sex and alcohol consumption (Banks & Smith, 1980; Engs, 1977; Gross, 1993; Hanson, 1974; Hughes & Dodder, 1984). However, these studies failed to address the possibility of a relationship between the day of the week and alcohol consumption.

Studies have shown that men drink more per drinking episode than women (Hunter et al., 1982; Geller, Russ, & Antomari, 1986; Kidorf et al., 1990) and that men also drink faster than women (Plant et al., 1977; Hunter et al., 1982). These researchers have suggested a sex difference in consumption rates may be due to a perceived social stigma associated with alcohol consumption for women. That is, women who drink heavily are seen as rejecting the traditional female role (Snortum et al., 1987).

Studies of alcohol consumption as a function of group size have shown men and women consume more alcohol when with a group of three or more (e.g., Sykes et al., 1993). Sykes et al. showed that people who drank alone tended to be more aware of the number of drinks they had consumed whereas people who drank with a group were often distracted by others in the group and were less likely to pay attention to their consumption rate, causing the average consumption of individuals in groups to be higher. This finding corroborates earlier studies (e.g., Geller et al., 1986) that indicated individuals in a group drank more than isolates.

Time of week is another potential factor that may relate to drinking behavior. Although research has been conducted using days of the week alcohol was consumed as a variable (Hunter et al., 1982; Sykes et
ALCOHOL PREFERENCE AND CONSUMPTION \[ \text{Traffanstedt, Rohr, and Sparks} \]
al., 1993), there has been little emphasis placed on
the time of week alcohol is consumed as a factor re-
lated to public drinking. The current research viewed
time of week as a potential factor, in that alcohol con-
sumption might be reduced during the workweek due
to lack of leisure time in which to engage in public
drinking.

The present study hypothesized that several vari-
ables are associated with alcohol preference and rate of
consumption in a public bar. Our hypotheses in-
cluded the following: (a) men will prefer beer rather
than mixed drinks, whereas women will prefer mixed
drinks; (b) rate of consumption will be influenced
by sex, with men consuming more alcohol than
women; (c) both men and women will consume more
alcohol while drinking with a group than when alone;
and (d) more alcohol will be consumed on weekend
time than mixed drinks, whereas women will prefer mixed
drinks; (b) rate of consumption will be influenced
by sex, with men consuming more alcohol than
women; (c) both men and women will consume more
alcohol while drinking with a group than when alone;
and (d) more alcohol will be consumed on weekend

of week, drink preference, and number of drinks were
recorded. Participants were arbitrarily chosen to be
observed, and observation time began when a drink
was placed before them. Sex, group status, time of
week, and drink preference also were noted at this
time. For participants who switched drink preference
during the observation, a notation of “other” was
made at the time the preference was changed. Each
instance of a drink being placed in front of a partici-

participant was counted as one drink. The exceptions were
22-oz beers, which were counted as two drinks. This
procedure was repeated throughout the evening un-
til the 18 participants for that day had been observed
for 30 min or more. The number of drinks consumed
was tallied and an hourly rate of consumption was
then calculated for each participant.

Results

The data showed men’s and women’s drink pref-
ERENCE to be beer. However, this preference was more
noticeable in men’s consumption. Of the 59 partici-

pants observed drinking beer, 23 were women and
36 were men. Fifteen participants consumed mixed
drinks, of whom 11 were women and 4 were men.
Sixteen participants (6 women, 10 men) were placed
in the “other” category. Overall, 72% of men and
57.5% of women drank beer, 8% of men and 27.5%
of women drank mixed drinks, and 20% of men and
15% of women were placed in the “other” category.
Results of a chi-square test for independence showed
a significant relationship between sex and drink pref-
ERENCE, $\chi^2(2, N = 90) = 6.10, p < .05.$

The data obtained on group status as a factor in
drink preference showed no relationship between the
two variables, $\chi^2(2, N = 90) = 3.22, p > .05.$ Of the 59
participants observed drinking beer, 32% were drinking
alone whereas 68% were associated with a group.
Of the 15 participants observed drinking only mixed
drinks, 33% were alone and 67% were in a group. Of
the remaining 16 participants in the “other” category,
56% were drinking alone and 44% were drinking as
part of a group. Finally, there was no significant rela-
tionship between drink preference and time of week,
$\chi^2(2, N = 90) = 1.33, p > .05.$

A three-way analysis of variance between sex,
group status, and time of week showed that consump-
tion on weekday nights was higher than on weekend
nights, $F(1, 82) = 4.34, p < .05.$ Even though men
tended to drink more than women and those drink-
ing in groups tended to drink more than isolates, our
findings do not support the hypotheses that sex,
$F(1, 82) = 2.62, p > .05,$ and group status, $F(1, 82) =
3.17, p > .05,$ are factors of consumption. Table 1 shows
the means and standard deviations of the number of
drinks per hour by sex, group status, and time of week. None of the interaction effects was significant.

To determine whether the above analyses were confounded by a disproportionate number of men and women in the various conditions, two chi-square analyses were performed. Neither group status, $\chi^2(1, N=90) = .54, p > .05$, nor time of week, $\chi^2(1, N=90) = .19, p > .05$, was significantly related to sex.

**Discussion**

Our results indicate neither time of week nor group size was related to drink preference. The data support our hypothesis that men’s drink preference would be beer. However, the hypothesis that women would prefer mixed drinks was not supported. The data show over half the women observed (57.5%) preferred beer over mixed drinks. Kidor et al. (1990) have suggested that preference for beer may be due to a lower alcohol level which allows more beverage to be consumed before reaching the same volume of alcohol as found in mixed drinks. However, Archer and Dawson (1992) found a high positive correlation between social factors and drink preference, such as the type of social function at which alcohol was being served rather than a correlation between actual taste and preference. Archer and Dawson found women’s ethanol consumption was evenly divided among beer, wine, and liquor whereas almost two-thirds of men’s ethanol intake was in the form of beer. The added problem of not being able to determine the alcohol content of a mixed drink in a naturalistic setting increases the confusion in light of Kidor et al.’s (1990) suggestion that women may be more restrained in consuming alcohol in a naturalistic social setting. Thus, the indicators are not clear, and the relationship between sex and drink preference as a factor in alcohol consumption deserves further research. The present results indicated both men’s and women’s drink preference to be beer, but the preference was more distinct in men’s consumption.

Previous studies have disagreed regarding the role of sex in rate of alcohol consumption (Banks & Smith, 1980; Engs, 1977; Gross, 1993; Hanson, 1974; Hughes & Dodder, 1984). Although men drank more in the present study, the results did not indicate a significant effect due to sex, whether the drinker was isolated or in a group. Recent reports in the media suggest an increasing number of young women are drinking more alcohol, and the present findings may reflect this trend. In contrast to previous research (e.g., Snortum et al., 1987), our findings do not show men drinking a significantly larger amount of alcohol than women, suggesting that women are currently drinking more than had previously been reported. Whether the increase in consumption for women is characteristic of all age groups or is restricted to a younger group deserves further research.

Time of week was shown to be a significant factor in alcohol consumption. We hypothesized more alcohol would be consumed on weekend nights; however, higher rates of alcohol consumption occurred on weekday nights rather than weekend nights. This effect could be a result of drink specials offered during the week. Such specials might induce people to consume more due to the price difference. Another possible factor might be tension relief following a stressful workday during the week.

The data suggest that group size has no effect on alcohol consumption. We hypothesized more alcohol would be consumed by those drinking as part of a group than those drinking alone (Geller et al., 1986; Sykes et al., 1993). Although our results reflect the tendency to drink more as part of a group, suggesting that peer pressure or a desire to be included in a group may affect alcohol consumption, statistical significance was not achieved.

No interaction between sex and group status was found with respect to rate of consumption. This finding is somewhat contrary to data reported by Sykes et al. (1993) who found level of group consumption was positively correlated to the proportion of men in the group. One possible reason we were not able to support the previous research may be found in differences in the focus of the research. Sykes et al. (1993) focused on the entire group’s rate of consumption as a function of group composition, whereas the current study focused on the individual’s consumption within the group as a function of group size. That is, the current study assessed group size but not group composition. Future research should address both of these factors in determining their relationship to alcohol consumption.

### TABLE I

**Mean Number of Alcoholic Drinks per Hour by Sex, Group Status, and Time of Week**

<table>
<thead>
<tr>
<th>Factor</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>40</td>
<td>2.97</td>
<td>1.11</td>
</tr>
<tr>
<td>Male</td>
<td>50</td>
<td>3.40</td>
<td>1.50</td>
</tr>
<tr>
<td>Alone</td>
<td>33</td>
<td>2.85</td>
<td>1.20</td>
</tr>
<tr>
<td>Group</td>
<td>57</td>
<td>3.42</td>
<td>1.39</td>
</tr>
<tr>
<td>Weekday Night</td>
<td>54</td>
<td>3.48</td>
<td>1.36</td>
</tr>
<tr>
<td>Weekend Night</td>
<td>36</td>
<td>2.81</td>
<td>1.23</td>
</tr>
</tbody>
</table>
In conclusion, the current study generally supports previous research on alcohol consumption (Geller et al., 1986; Plant et al., 1977; Snortum et al., 1987; Sykes et al., 1993). The results should be combined with other factors and studies to obtain a more complete picture of drinking behavior. Because it is almost impossible to address all the variables that affect drinking behavior at one time, additional research must be conducted before we can begin to approach an understanding of the factors influencing drinking behaviors. Variables such as social interaction, drink preference, and the time of week alcohol is consumed deserve more attention to determine their relation to drinking behavior. In addition, regional data should be compared to correlate prevalence rates with the above-mentioned variables. By performing such projects, health professionals would be able to target specific demographics and possibly reduce the occurrence of alcohol-related illness.

References


Portrayal of Gender Roles in Music Television

Kevin F. McNeill
Luis A. Vega

California State University, Bakersfield

Students (N = 429; women = 273, men = 156) enrolled at a junior college and state university in central California were assigned to 1 of 4 conditions (visual only, audiovisual, audiovisual with discussion, and a no-videos-shown condition) and asked to view three videos commonly seen on Music Television (MTV). At the conclusion of each video, participants filled out a questionnaire designed to elicit their perception(s) of particular gender role behaviors, such as sexism, objectification, etc. Factor analysis revealed the presence of three factors: Male Power, Female Power, and Overt Sexuality. Further analysis showed that factor scores were not significantly different by condition. Although the format of MTV is attuned to society’s concerns, it still presents gender role stereotypes that are traditional and subtle.

Researchers have analyzed various forms of television content in an attempt to better understand how each uniquely distorts everyday life (e.g., Craig, 1992). They have also examined the presentation of racial minorities, the elderly, sex roles, social behavior, and family role structures and interactions (Brown, 1976; Craig, 1992; Jeffries, 1986; Kalof, 1993; Lovdal, 1989; Rubey, 1991; R. Sommers-Flanagan, J. Sommers-Flanagan, & Davis, 1993; Sun & Lull, 1986). Generally, these researchers have found that traditional and stereotypical representations of life prevail in television programming and advertising (Vincent, Davis, & Boruszkowski, 1987). The effect that different types of formats in television programming have on viewers is an ongoing area of research, and an area that we address in this paper.

Over the last few decades, equality issues for women have been in the forefront of the mass media. Equality gains have not fully materialized, however. Women still are overrepresented in statistics related to poverty, earn less than men for comparable jobs, and continue to be demeaned in the mass media, including commercials, music videos, and movies (Dominick, 1979; Franzoi, 1996). For example, women continue to be negatively portrayed in television in subtle forms, although their roles are no longer relegated to those of housekeepers, men’s attendants, or the “weak sex” (Dominick, 1979).

Many positive changes have occurred in television programming over the last two decades, but more quantifiable changes must occur for gender equality to exist. In television today, women are still underrepresented in positions of authority, and they are portrayed more for their sexual appeal than for their intellectual contributions (R. Sommers-Flanagan et al., 1993). This subjective portrayal of women in television is not confined to a specific format, but is seen on television’s prime time (Dominick, 1979), commercials (Craig, 1992), and rock music videos (Vincent et al., 1987). Although television programs can reflect actual discrimination of women, these
programs need not perpetuate such gender inequality. As a socializing agent, television has the potential to set the model for gender equality (Bandura & Walters, 1963).

On the other hand, subtle messages in rock music video programming are difficult to assess, with some studies finding equivocal results. For instance, Rubey (1991) examined the effects of programs typically shown on Music Television (MTV), programming which is characterized by rapid, visual images of glamorous, good-looking people, some nudity, and some violence. Based on the results of a qualitative study of the programs shown on MTV, Rubey concluded that most of the programs shown on MTV were innocuous; for many individuals these programs were “thought provoking.” To Rubey, people who watch MTV are cognizant viewers, able to separate fantasy from reality. In contrast, R. Sommers-Flanagan et al. (1993) examined music videos shown on MTV and concluded they perpetuate gender role stereotypes. Other researchers have found similar negative effects, particularly with regard to rock music videos (Toney & Weaver, 1994; Took & Weiss, 1994; Vincent et al., 1987).

Experimental evidence also shows that viewing rock music videos can exacerbate negative gender stereotypes. Hansen (1989) found that viewers who saw rock music videos that depicted men acting “macho” and women being “sexually submissive” tended to endorse gender stereotypes more often than viewers who saw neutral videos. This experiment suggests a causal link between the portrayal of gender stereotypes in music videos and viewers’ perceptions of social reality. As a result, we have a reliable overview of the consequences of direct (blatant) manifestations of watching these videos. Less is known, however, of what might be the subtle (latent) consequences of watching negative gender stereotypes on MTV music videos.

Some evidence suggests subtle messages are present in music videos. Christenson and Peterson (1988) found that music genres are organized into several meta-genres. In analyzing 26 different music genres (e.g., jazz, classical, soul, rock, etc.), they found that racial origin of music was a powerful “factor” in determining music preference for both men and women. However, other factor structures were different for men and women. For a factor with different forms of rock music, heavy rock had higher factor loadings for men (loadings are mathematical coefficients showing degree of association between variables and factors). For women, these different forms of rock excluded heavy metal. Perhaps this gender difference is a manifestation of the degradation of women shown in heavy rock (Took & Weiss, 1994), as opposed to musical genres that are more subtle and latent in form.

Although the manifest content of television programming has changed, practically no studies have investigated subtle messages embedded in it. Content analysis of television programming provides some answers (Dominick, 1979; R. Summers-Flanagan et al., 1993). However, these analyses refer to the content of those programs and less to the perceptions of viewers. Thus, in this study we examined (a) how content analysis of music videos can be organized so that any subtle meaning embedded in music videos can be assessed and (b) what differences exist between viewers and nonviewers of music videos in this latent content. Additionally, we explored (c) reasons that can help explain the origin of these viewer differences and (d) possible gender differences in how men and women are portrayed in music videos. We center our analysis on music videos, particularly of the type seen on MTV. We take this approach because rock music videos contain the strongest gender stereotypes (Franzoi, 1996) and because they are directed at young audiences, some of the most impressionable members of our society (Schuman & Scott, 1989).

**Method**

**Participants**

Participants (n = 429; women = 273, men = 156) consisted of undergraduate students enrolled in Introductory Psychology, Gender Roles, and Child Psychology courses at a junior college and state university in central California. Participants were between 16 and 58 years of age (M = 23.47, SD = 7.67), with women (M = 23.86, SD = 7.79) tending to be slightly older than men (M = 22.49, SD = 7.00). Participants were recruited from classes, student clubs, and through informal channels (friends of students who decided to participate and who agreed to tell others). All participants were 16 years of age or older, and all signed informed consent forms. They also were assured complete anonymity and were informed of their option to withdraw during all phases of the study.

**Materials**

The test instrument consisted of a survey containing 15 questions, each scored on the basis of an 8-point Likert scale, ranging from 1 (“not present”) to 8 (“consistently presented as a major theme”). These questions were adopted from a study conducted by R. Sommers-Flanagan et al. (1993). These researchers developed categories “designed to focus on sex role behaviors frequently identified as stereotypically male or female . . . [and] other sexually oriented behaviors” (p. 746), and focused on seven
categories (Dominance/Subservience, Aggression [Implicit and Explicit], Aggression with sexuality, Objectification, and Sexuality [Implicit and Explicit]). The present study extends these categories by modifying the questions to include a gender-based origin (e.g., “Objectification” was divided into the separate categories of “Male portrayed as object or decoration” and “Female portrayed as object or decoration”). A question asking the participants to rate the presence/absence of “overt sexism” was also added. It should be noted that R. Sommers-Flanagan et al.’s study was qualitative, reporting the frequency of major categories trained judges saw in a large set of videos. Our study sought to replicate, quantify, and extend their results using a questionnaire format.

The procedure for video selection consisted of the following: Eighteen hours of MTV were recorded from March 21–24, 1995, during the time periods of midnight to 6:00 p.m., 9:00 a.m. to 3:00 p.m., and 2:00 p.m. to 10:00 p.m. The tapes were then screened for duplications, and 20 videos were then randomly selected. These videos were shown to 10 individuals (5 men, 5 women), who rated them on themes of aggression, violence, and sexuality. A consensus model was used for the rating system (R. Sommers-Flanagan et al., 1993) in which the raters openly discussed their ratings; if differences existed, they watched the videos again until group consensus was achieved. Three videos were selected on the basis of the raters’ agreement that these videos were representative of MTV: (a) “Red Light Special,” by TLC, which rated high on the theme of sexuality and relatively low on aggression and violence; “Hold On,” by Jamie Walter, which rated high on the themes of aggression and violence but relatively low on sexuality; and “Hold My Hand,” by Hootie and the Blowfish, which rated relatively low on all three themes. Additional criteria for selection were that all three videos were of similar musical styles (contemporary), and the combination represented a diversity of ethnicities and genders, an important factor according to Christenson and Peterson (1988).

**Procedure**

Participants were assigned to one of four viewing conditions: (a) visual only (n = 62)—without the sound component of the video; (b) audio and visual (n = 80), in which participants could see and hear the videos but not discuss the content of what they were watching; (c) audio, visual, and discussion allowed (n = 216), in which participants were told to imagine they were home and to feel free to bring up anything for discussion as they watched the videos; and (d) no videos shown—control group (n = 71). All participants were told this was a study on their attitudes and perceptions with regard to MTV and its presentation of male and female gender roles. They were also told the study was voluntary and anonymous. After this presentation, the participants read and signed the informed consent forms. Participants in the video viewing conditions (a–c) watched all three videos, which were counterbalanced to reduce order effects. After viewing each video, participants filled out the instrument shown in the Appendix. The control group did not watch any videos; rather, they were asked to provide ratings of those videos that came to their mind when they thought of MTV. All participants were debriefed on the hypotheses of the study after concluding their participation.

**Results**

The ratings of each participant were averaged across the three videos they watched, and data for the three viewing conditions (a–c, n = 354) were combined. This was done to determine if a factor structure existed for the types of videos the participants watched in this study—a structure that should be present regardless of the format on which the participants watched these videos, and hence why we combined data from the viewing conditions. A principal component analysis of the 15 questions was conducted. The Kaiser criterion, which extracts for rotation the number of factors with eigenvalues of one or higher, as well as varimax rotation were used. The solution produced three factors that accounted for 56.5% of the variance in the 15 items: (a) Female Power, (b) Male Power, and (c) Overt Sexuality (see Table 1).

We labeled and interpreted the three factors as follows: The Female Power factor included perceptions of women as aggressive and/or violent towards men, powerful, or as the initiators of sexual advances (α = .81; accounted for 36% of the variance). The Male Power factor included perceptions of violence, aggression, and/or domination by men over women, as well as perception of women being seen as vulnerable or weak (α = .84; accounted for 11% of the variance). Finally, the Overt Sexuality factor included perceptions of sexuality, but also included objectification of women and perceptions of men as being the initiators of sexual advances (α = .85; accounted for 9% of the variance). It should be noted the names we chose to label our factors were somewhat arbitrary; however, based on our reading of the literature, they seem to make sense, as will become evident given our subsequent discussion.

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1. We also conducted principal component analysis for ratings of each video by itself. However, analyzing the videos separately did not produce an interpretable factor structure.
Factor scores for each of the three factors were computed as the average of the variables within each factor, adjusting for missing data. That is, if six variables loaded on the factor, the six ratings were added and were divided by 6 to arrive at the factor score. If among the six variables one had missing data, the sum of the variables was divided by 5, and so on, if more than one variable had missing data.

Table 2 presents the results of three one-way analyses of variance (each factor score compared across conditions). Most apparent in Table 2 is the control group; these participants consistently overestimated the subtle content of music videos for each factor compared to the other groups. That is, the group that did not see any videos (control group), but who were asked to think about videos they had seen in the past, consistently overestimated the amount of Female Power ($M = 3.75$), Male Power ($M = 5.20$), and presence of Overt Sexuality ($M = 5.98$).\(^2\)

Only in the factor of Overt Sexuality were there any significant differences found among the experimental groups (between the audio/visual and audio/visual/discussion groups). It should be noted that giving people the chance to talk about these videos may have polarized their opinion, which might have reduced the variance for this group ($SD = 0.86$). It is also possible that because this was the weakest factor (accounting for 9% of the variance), any differences might be due to instability of the factor.

Finally, a $t$ test was conducted to test gender differences in terms of the validity of the Male Power and Female Power factors—one would expect higher ratings for the former than the latter given gender inequality in real life. In fact, this was the case, with Male Power having a mean rating of 3.86 ($SD = 1.17$) and Female Power having a mean rating of 3.10 ($SD = 0.85$), with the difference between these two mean ratings significant, $t(390) = 13.67, p < .01$.

Also, a manipulation check was conducted to make sure the participants’ ratings were their responses to themes in the videos, and not the popu-
larity of the videos they were watching (not to be confused with singer popularity, which we did not measure). Whereas the three videos were rated significantly different from each other on popularity, $F(2,1017) = 74.80; p < .001$, differences across these three groups on theme ratings (factor scores) were not significantly different from each other (i.e., no significant differences were found across the four different viewing conditions; see Table 1), other than on the Overt Sexuality factor, which was explained above. The result of this manipulation check suggests that, although participants could recognize the popularity of the videos, this recognition did not significantly bias their perception of the thematic contents of the factors.

**Discussion**

The first hypothesis tested for the presence of subtle meanings embedded in music videos. We found that 15 different gender stereotypes could be succinctly captured in three factors: Female Power, Male Power, and Overt Sexuality. Underneath the surface of the blatant messages one sees in music videos, over 50% can be explained in terms of power and the sexual roles expected of men and women in television programs and society (i.e., the three factors we found). Our analysis thus complements and quantifies the work other researchers have done on content analysis and major themes in music videos (R. Sommers-Flanagan et al., 1993).

The second hypothesis tested for differences between viewers and nonviewers of music videos in this latent content; we found some surprising results. Specifically, we found that people who are asked to recall themes from music videos they have seen tend to overestimate the presence of stereotypes present in those videos. This finding is a cause for concern because perceptions guide social reality (Asch, 1956), encouraging people to conform to the status quo (in this case accepting gender stereotypes). One potential weakness is that we do not know what the control group recalled when asked to think about MTV music videos and the prevalence of the 15 themes we presented to them. It is possible we might have gotten what Rosenthal and Rosnow (1991) refer to as the “good subject” effect; where participants may have correctly anticipated the bases of the study. We are unable to completely rule out this explanation. However, the fact the control group consistently overperceived the prevalence of these subtle themes, gives us some bases for confidence in these results (see Table 2).

The third hypothesis tested the origin of differences between viewers and nonviewers in latent content. Several plausible explanations emerged. First, it is possible that people who watch music videos justify the portrayal of gender inequality they see by using cognitive dissonance (Festinger & Carlsmith, 1959). This theory posits that if we experience an aversive state (and watching women being degraded could induce such a state), we will attempt to eliminate that negative state by changing our behaviors or attitudes. Because people enjoy watching videos, they are more likely to change their attitudes about them than to stop watching them. We can expect this effect to be true in popular music videos, where viewers would be more likely to downplay any negative portrayal of gender stereotypes.

Second, perhaps it is possible the participants in our study inferred the purpose of the study and experienced psychological reactance (Brehm, 1966). That is, if people perceive their freedom to choose is

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**TABLE 2**

<table>
<thead>
<tr>
<th>Group</th>
<th>$n$</th>
<th>Female Power</th>
<th></th>
<th>Male Power</th>
<th></th>
<th>Overt Sexuality</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>$M^*$</td>
<td>SD</td>
<td>$M^*$</td>
<td>SD</td>
<td>$M^*$</td>
<td>SD</td>
</tr>
<tr>
<td>Visual Only</td>
<td>62</td>
<td>3.10a</td>
<td>0.82</td>
<td>3.84a</td>
<td>0.99</td>
<td>3.83a</td>
<td>1.05</td>
</tr>
<tr>
<td>Audio/Visual</td>
<td>80</td>
<td>2.99a</td>
<td>0.73</td>
<td>3.57a</td>
<td>0.78</td>
<td>3.83ac</td>
<td>1.02</td>
</tr>
<tr>
<td>A/V &amp; Discuss</td>
<td>216</td>
<td>2.92a</td>
<td>0.62</td>
<td>3.53a</td>
<td>0.88</td>
<td>3.47ad</td>
<td>0.86</td>
</tr>
<tr>
<td>Control</td>
<td>71</td>
<td>3.75b</td>
<td>1.22</td>
<td>5.20b</td>
<td>1.47</td>
<td>5.98b</td>
<td>1.18</td>
</tr>
</tbody>
</table>

* Same letters indicate that means are not significantly different from each other—using the Tukey procedure ($p < .05$).

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McNeill and Vega
being tampered with, they will do the opposite—either overestimate or underestimate the presence of negative gender stereotypes. Because the participants were behavioral sciences students, this explanation makes intuitive sense. However, it is unlikely that all participants across the video viewing conditions felt the same way, as the mean rating differences across these groups were not significant. In this sense, psychological reactance is not a viable explanation for the video viewing conditions.

Third, it is possible the mass media is presenting fewer gender stereotypical representations than in the past. On the surface, this is not true, as many studies using content analyses suggest blatant forms of gender stereotyping still are prevalent in television today (Rubey, 1991; R. Sommers-Flanagan et al., 1993). At a subtle level, we also found that gender stereotypes are having an effect on viewers’ perceptions of gender roles, as the results showed that viewers see a significant power differential between men and women. Our analysis showed the Female Power factor accounted for the most variance (i.e., 36%), suggesting it was salient in our participants’ minds. Yet, women still are not portrayed on equal terms with men in MTV music videos, and it is only when they act in traditionally masculine ways (e.g., aggressive, dominant, etc.) that they are perceived to have some power.

Illusory correlations are one final possible factor that can explain the subtle meaning of gender stereotypes; that is, the belief that two variables are related when no actual association exists (Chapman & Chapman, 1969). Specifically, negative characteristics such as gender stereotypes may be overestimated because they are distinctive in occurrence. Because our control group did not view any videos, it is possible they were only able to recall distinctive negative gender stereotypes from memory. Unfortunately, our data do not permit us to answer this question, but future studies may want to take this into consideration.

Several weaknesses about our study should be noted. First, although the variables of race, gender, and music popularity affect a person’s interpretation of music and music videos, we are not able to make any claims on these variables as none were systematically manipulated. Second, it is possible the self-selection of the participants might have introduced a bias in our results; all our participants were college student volunteers. However, the fact that we still found evidence of gender stereotypes in these participants suggests our results hold true, because college students and volunteers tend to be more liberal in their attitudes (Rosenthal & Rosnow, 1991). Finally, we were not able to determine why our control group

had inflated perceptions of gender roles in MTV’s music videos. We could have asked our control participants how much time they spent watching MTV, if at all. This approach would have allowed us to compare participants across conditions for exposure to MTV. We did not do that, but it is an important factor that needs to be included in future studies.

To the extent that negative gender stereotypes in music videos influence our perceptions, it is possible to carry out strategies to reduce their negative effects. A critical review of the literature on violence in the mass media by Linz, Wilson, and Donnerstein (1992) showed that educational interventions were the most effective means to mitigate the effects of violence; legal solutions and warnings were not as effective. We also now know that making messages persuasive, one sided, and relevant to the target audience can render educational interventions successful (Franzoi, 1996). Consequently, future research in this area could benefit from looking at how educational interventions could be used to reduce not only the blatant forms of gender stereotypes, but also more subtle forms (e.g., Female/Male Power and Overt Sexuality).

References


### APPENDIX

**Test Instrument**

<table>
<thead>
<tr>
<th>Age:</th>
<th>Ethnic Group:</th>
<th>African American</th>
<th>Hispanic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (M or F):</td>
<td>Asian</td>
<td>Caucasian</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Native American</td>
<td>Other (Specify)</td>
<td></td>
</tr>
</tbody>
</table>

**Conditions 1–3:** Please rate each of the videos based on the scale below:

**Condition 4:** Please rate each of the following themes based on your perception of its prevalence on MTV:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Not Present</strong></td>
<td><strong>Consistently Presented as a Major Theme</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Female portrayed as “object” or “decoration”</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>2. Male portrayed as “object” or “decoration”</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>3. Violence directed toward female by male</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>4. Violence directed toward male by female</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>5. Male dominates over female</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>6. Female dominates over male</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>7. Aggression directed toward female by male</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>8. Aggression directed toward male by female</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>9. Overt sexism presented (traditional gender roles)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>10. Female is recipient of male sexual advances</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>11. Male is recipient of female sexual advances</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>12. Theme of presentation is clearly sexual in nature</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>13. Sexual overtone present, but not clearly stated</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>14. Female seen as powerful or in control</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>15. Female seen as vulnerable or weak</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>

**How would you rate the overall popularity of this video?**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Not Popular</strong></td>
<td><strong>Very Popular</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Contrast Effects and Ratings of Physical Attractiveness

Ninety-seven participants (52 women, 45 men) were divided into two groups. Participants in the positive contrast condition were exposed to photographs of highly attractive men and women prior to rating photographs of target stimuli of average physical attractiveness. Participants in the negative contrast condition were exposed to photographs of unattractive men and women prior to rating photographs of target stimuli of average physical attractiveness. After rating the target stimuli, participants in both groups rated their own level of physical attractiveness. Participants in the positive contrast condition rated target stimuli of average attractiveness significantly lower in physical attractiveness than did participants in the negative contrast condition. The tendency for participants in the negative contrast condition to rate their own level of physical attractiveness higher than did participants in the positive contrast condition approached, but did not reach, significance. The tendency for female participants to rate the target stimuli higher in attractiveness than male participants was marginally significant. Results suggest the influence of the media on our conceptions of beauty.

Julie M. Forth
Harvey R. Freeman*
Ohio Wesleyan University

One need only look at magazine and television ads to see the importance society places on physical attractiveness. From an early age, women in our society are taught the commercialized art of correcting their physical imperfections. The importance placed on a woman’s physical appearance likely stems from the historical tendency for women in our society to be viewed as the property of men (Franzoi, Kessenich, & Sugrue, 1989). A woman who matches the societal standards of beauty is valued more highly than is a woman who does not meet these physical criteria (Franzoi et al., 1989), and a man’s social status is enhanced if he is in the company of an attractive woman (Sigall & Landy, 1973).

Men and women tend to agree about facial attractiveness level, both of their own sex and the opposite sex (Jackson, 1992). Because of the importance our culture places on physical attractiveness, researchers have studied the factors that influence judgments of attractiveness. One approach looks at the influence of contextual cues (i.e., the presence of stimuli that differ in attractiveness from the target). Investigators have looked at the existence of a contrast effect: targets are judged to be more or less physically attractive depending on the context in which they are viewed. For example, Kenrick and Gutierres (1980) tested the effects of prior exposure to attractive stimuli on judgments of the attractiveness of a target person of average attractiveness. Participants were 81 male, university dormitory residents who were asked to judge a potential blind date for another dorm resident. One group of participants watched the then popular television show Charlie’s Angels (featuring three beautiful women as the main characters) immediately prior to making their judgments; the control group, also dorm residents, was not exposed to the TV program. A contrast effect was observed: the group who viewed Charlie’s Angels rated the target significantly less attractive than did the control group.

Kowner and Ogawa (1993) conducted a similar experiment in Japan, using 337 Japanese male and female undergraduate students. The experimenters examined the existence of a physical attractiveness contrast effect on participants’ evaluation of their own attractiveness as well as on participants’ judgments of others’ attractiveness. Consistent with the findings of Kenrick and Gutierres (1980), both men and women displayed a contrast effect on judgments of the physical attractiveness of a target stimulus. The more attractive a prior stimulus, the lower was the evaluation of a target stimulus’ physical attractiveness. A similar contrast effect on self-evaluations occurred for female, but not male, participants.
Cash, Cash, and Butters (1983) assessed the effects of exposure to same-sexed peers of varying levels of physical attractiveness on one’s self-evaluation. It was predicted that participants (51 college women from an introductory psychology class) would see themselves as less physically attractive following exposure to attractive stimuli. Participants were exposed to same-sexed stimulus persons who were either not physically attractive, physically attractive, or highly attractive professional models. They were then asked to rate the level of their own physical attractiveness and to indicate their degree of satisfaction or dissatisfaction with various body parts. The predicted contrast effect was found for self-perceived attractiveness, but not for body parts satisfaction.

Melamed and Moss (1975) tested the hypothesis that context effects on social stimuli depend on associations that are established between the context and the target stimuli. Sixty participants were divided into two equal groups. Each group viewed 32 paired slides (constructed by photographing two pictures on each single slide). In the positive context condition, each slide contained a neutral and an attractive stimulus. In the negative context condition, each slide contained a neutral and an unattractive stimulus. The experiment was conducted in three phases. In the first phase, 26 individual black and white slides were presented and participants were asked to rate each slide (10 physically attractive white females, 10 physically unattractive white females, and 6 neutral white females) on 9-point scales for 5 different dimensions, including physical attractiveness. The second phase included the presentation of 1 of the 2 manipulations of the 32 paired slides. No ratings took place during this phase. In the final phase, participants rerated the 26 slides from Phase 1. As hypothesized, a decrease in the ratings of the target stimuli in the positive context condition and an increase in ratings of the target stimuli in the negative context condition was observed.

Research shows that men and women tend to agree about facial attractiveness level, both of their own sex and the opposite sex (Jackson, 1992). Research (Kenrick & Gutierres, 1980; Kowner & Ogawa, 1993) also demonstrates a contrast effect when judging the physical attractiveness of target stimuli. Results concerning a contrast effect when judging one’s own level of attractiveness are equivocal (Cash et al., 1983; Kowner & Ogawa, 1993). Thus, the current research examines the effect of viewing either physically attractive stimuli or physically unattractive stimuli on judgments of the attractiveness of a target person of average attractiveness and on the evaluation of one’s own attractiveness.

It was hypothesized that participants who view photographs of attractive stimuli prior to viewing the photographs of average-looking peers will rate the average-looking peers lower in physical attractiveness than will participants who view photographs of unattractive stimuli prior to viewing the photographs of average-looking peers. It was also hypothesized that participants who view photographs of attractive stimuli will rate themselves less attractive than will participants who view photographs of unattractive stimuli.

Method

Participants
The participants were 52 female and 45 male undergraduate students who participated in the study in partial fulfillment of a course requirement. Participants ranged in age from 17 to 22 years.

Materials
Each participant received a 10-page packet consisting of 1 page of instructions and 9 pages of rating scales, 1 for each of the 8 stimuli presented and 1 for self-rating. To disguise the purpose of the study, six distracter dimensions (aggressive, sincere, stubborn, friendly, happy, bashful) were rated along with the critical dimension of physical attractiveness. Each page contained one 7-point rating scale for each of the seven dimensions, with 1 = not at all and 7 = very.

Procedure
Testing took place in groups of six to eight people. Participants were informed they would be shown slides of several people. After viewing each slide, they were to give their impressions of the person on a series of rating scales. Following these ratings, they were to provide some brief background information about themselves. Participants were divided into two contrast conditions. In one condition (positive contrast), participants were shown, in random order, slides of six highly attractive individuals, three men and three women, taken from popular magazines. Following this exposure, participants were shown slides of two individuals of average attractiveness, one male and one female, taken from a high school yearbook. In the second condition (negative contrast), participants were shown slides of six individuals of below average attractiveness, three male and three female, taken from a high school yearbook. Following this exposure, they were shown the same two slides of individuals of average attractiveness that were shown to the first group. The slides were selected through a pilot study in which the physical attractiveness level of 32 individuals was determined by 16 vol-
TABLE I

Perceived Attractiveness of Average-Looking Man, Average-Looking Woman, and Self as a Function of Contrast Condition and Sex

<table>
<thead>
<tr>
<th>Condition</th>
<th>Target stimulus</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average-looking man</td>
<td>Average-looking woman</td>
<td>Self</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Positive contrast</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>3.55</td>
<td>1.18</td>
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Results

To test the hypotheses concerning a contrast effect, a multivariate analysis of variance (MANOVA) was computed with participant sex (male or female) and context condition (positive contrast or negative contrast) being the independent variables; physical attractiveness ratings of an average-looking man, physical attractiveness ratings of an average-looking woman, and ratings of self-attractiveness served as the dependent variables. The MANOVA yielded a significant main effect for context condition, $F(3, 91) = 3.12$, $p = .03$, and a marginally significant main effect for sex, $F(3, 91) = 2.51$, $p = .06$. No significant interaction effect was observed, $F(3, 91) = .01$, $p = .76$.

Univariate $F$ tests showed the significant effect of context condition held for ratings of the average-looking woman, $F(1, 93) = 5.45$, $p = .02$, and for ratings of the average-looking man, $F(1, 93) = 4.99$, $p = .03$; the effect for self-ratings approached, but did not reach, significance, $F(1, 93) = 2.76$, $p = .10$. In each case, the positive contrast condition led to lower ratings of attractiveness than did the negative contrast condition (see Table 1).

Univariate $F$ tests showed the significant sex effect held for ratings of the average-looking woman, $F(1, 93) = 4.01$, $p = .05$, and for ratings of the average-looking man, $F(1, 93) = 6.57$, $p = .01$. In each instance, female participants rated the target stimulus higher in physical attractiveness than did male participants. The effect did not hold for self-attractiveness, $F(1, 93) = .06$, $p = .80$.

Discussion

Participants in the positive contrast condition rated the target stimuli significantly lower in attractiveness than did the participants in the negative contrast condition. This contrast effect has implications for the influence of the media on our concept of beauty. The media presents a standard of beauty that affects everyone to some extent. Although television, movies, and magazines may not set these standards, they may be society’s most significant promoter of them. Downs and Harrison (1985) examined television commercials and estimated that the average viewer is exposed to approximately five messages per day that deal directly with beauty, making television commercials a powerful source of attractiveness standards. We compare our own attractiveness level, as well as the level of those we know, to the standard presented by the media. If that standard is skewed, so will be our perceptions of beauty. Myers and Biocca (1992) suggest that individuals internalize the idealized model of beauty represented in the mass media and media messages that emphasize the pursuit of this idealized model promote image distortions, particularly among young women. It has been hypothesized (Boskind-Lodahl, 1976) that the pressure on women to achieve this idealized image is one reason eating disorders have dramatically increased.

The judgment of attractiveness is largely a relative perception. The media both reflects and contrib-
utes to the attractiveness standard individuals use to make this judgment. The media is saturated with men and women of above-average attractiveness, thus altering the way the individual in today’s society views others and self. Being constantly exposed to attractive images may cause average-looking peers to seem relatively unattractive. It may also cause some individuals, primarily young women, to pursue a standard that is unrealistically high.

The purpose of this experiment was to examine the effects of contextual cues, viewing either physically attractive or physically unattractive stimuli, on judgments of the level of attractiveness of target persons of average attractiveness and on the evaluation of one’s own level of attractiveness. The findings, along with those of previous research, support the notion that the media influences what individuals and society deem physically attractive and unattractive. The current research focused on facial attractiveness. Even more important may be the consequences of the media’s influence on perceptions of somatic attractiveness. The emphasis on weight reduction in pursuit of the media’s ideal may lead some young women to engage in chronic dieting, producing emotional consequences such as irritability, anxiety, depression, and apathy (Keys, Brozek, Henschel, Mickelsen, & Taylor, 1950). Future research should investigate the contrast effect as it pertains to perceptions of somatic attractiveness and the relationship between media messages and distortion of body image. Until challenged, the standards of beauty established by the media will continue to flourish, leaving the public to deal with its probable consequences.

References

Processing of Identity and Conditional Relations in Humans:
An Extension of D’Amato, Salmon, Loukas, and Tomie (1986)

K. Eric Chan
Marian D. Perera
Jason C. Robinson
Mark S. Schmidt*
The University of Georgia

In testing human participants’ processing of identity and nonidentity stimulus relations, identity matching (IM) trials and nonidentity, conditional matching (CM) trials served as practice. Test cycles consisted of IM probe trials introduced within CM baseline trials (CM/IM) and CM probe trials within IM baseline trials (IM/CM). Twenty-one participants responded to computer-generated stimuli using a keyboard. The results replicate and extend those of D’Amato, Salmon, Loukas, and Tomie (1986) to human participants. Differences in probe and baseline response times in the IM/CM and CM/IM test cycles support the conclusion that humans process IM and CM in different ways, as D’Amato et al. concluded for monkeys but not for pigeons.

Often, psychologists study animal cognition to help clarify cognitive processes that exist in animals and humans, and also to explore phyletic differences in intelligence. One interesting cognitive process found in humans and some animals is the matching concept. The matching concept enables an animal to match identical stimuli even when no reinforcement history is associated with the stimuli. Matching is achieved conceptually and is not based on learning specific stimulus associations. The requirements for demonstrating use of the matching concept are articulated in the animal cognition literature (e.g., Thomas, 1996). Generally, transfer tests contain novel stimuli to help researchers determine the extent of an animal’s use of the matching concept. Test stimuli should be truly novel (i.e., training and test stimuli should be sufficiently different). If the test stimuli are not novel, then the animal may achieve correct responses through stimulus generalization.

Different species apply the matching concept at different levels of proficiency. Human children as young as 27 months use the matching concept (Brown, Brown, & Poulson, 1995). Another study indicated infant chimpanzees (Pan troglodytes) can develop the matching concept after exposure to only two training stimuli (Oden, Thompson, & Premack, 1988). In studies involving a monkey species, Cebus apella, the matching concept was demonstrated, but appears to have a limited range of application (D’Amato & Colombo, 1989).

In pigeons, the matching concept is not readily apparent. In most studies, pigeons appear to use simpler, nonconceptual processes in lieu of the matching concept (e.g., Carter & Werner, 1978; Wilson, Mackintosh, & Boakes, 1985). Studies with rats and fish have yielded similar results (Thomas & Noble, 1988; Zerbolio, 1985). These findings provide an interesting comparison with primates’ use of the matching concept. The ability of species to learn and use abstract concepts (e.g., the matching concept) is considered to reflect higher intelligence (Thomas, 1980).

In their study of the matching concept in animals, D’Amato, Salmon, Loukas, and Tomie (1986) examined responses of monkeys (Cebus apella) and pigeons (Columba livia) in identity matching (IM) and nonidentity, conditional matching (CM) tasks. IM requires an animal to process a sample stimulus and subsequently to match that stimulus with an identical comparison stimulus. Use of the matching concept is possible in IM tasks. CM is a different task, in which an animal associates and matches two noniden-

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tical stimuli. Use of the matching concept is not possible in CM tasks.

An animal with a poorly developed matching concept will probably process IM and CM tasks similarly (Carter & Werner, 1978; D'Amato et al., 1986). An implication of this similarity of processing is that an animal will respond similarly in both IM and CM tasks. However, if an animal learns these tasks in different manners (e.g., IM conceptually, CM by forming specific stimulus associations) then differences in responding in the two tasks might be observed (D'Amato et al., 1986). Specifically, D'Amato et al. hypothesized that differences between baseline and probe response times would be similar regardless of which matching task, IM or CM, served as baseline or probe. This prediction was based on the assumption that CM and IM tasks are processed similarly. However, monkeys and pigeons might show differences in the patterns of their probe response times if monkeys use the matching concept on IM trials and pigeons do not.

To test their hypothesis, D'Amato et al. (1986) trained monkeys and pigeons in both IM and CM tasks with visual stimuli. For testing purposes, baseline IM with CM probe trials (IM/CM) and baseline CM with IM probe trials (CM/IM) were employed. If the animals used different processes for IM and CM, then probe response time patterns should be different as a function of the probe used. Specifically, D'Amato et al. hypothesized CM probe response times would be slower than IM baseline response times, whereas IM probe response times would be comparable to CM baseline response times. Both predictions arise from taking into account the decreased likelihood of anticipating a probe trial against the baseline. However, IM probes present a lesser challenge against a CM baseline because choice of the correct comparison stimulus could be made by using the matching concept, which D'Amato et al. hypothesized is a faster process.

With the monkeys, D'Amato et al. (1986) obtained slower response latencies for CM probes against the IM baseline than for IM probes against the CM baseline. IM probes produced response latencies similar to the CM baseline latencies. D'Amato et al. regarded the findings as evidence that identity and conditional relations are processed differently by monkeys, and suggested that the matching concept may have been used on IM trials.

With the pigeons, D'Amato et al. (1986) found probe and baseline trials produced similar mean response times in the IM/CM test cycle and somewhat different mean response times in the CM/IM test cycle. These data suggested pigeons do not differentially process conditional and identity relations.

D'Amato et al. proposed pigeons process both identity and conditional matching by forming specific stimulus associations and do not use the matching concept in the IM task.

Our experiment replicates and extends D'Amato et al.'s (1986) research to human participants. Since humans are capable of using the matching concept (e.g., Brown et al., 1995), we hypothesize human performance will resemble monkey, rather than pigeon, performance. This hypothesis is based on the suggestion by D'Amato et al., that use of the matching concept is the reason for monkeys' differential processing of IM and CM tasks.

Method

Participants

Participants were 21 students in the undergraduate Experimental Psychology course at the University of Georgia. Sixteen participants were women ($M = 20.7$ years old, $SD = 0.77$) and 5 were men ($M = 21.2$ years old, $SD = 0.70$). None of the participants were aware of the hypotheses of the experiment, and all individuals were treated according to the ethical principles of the American Psychological Association.

Apparatus

IBM-compatible computers were used to present stimuli and record the participants' responses. Some participants used computers located in university computer labs, and others used their own computers in their homes. Participants responded with two keys on the keyboard; stimuli appeared on the monitor screen.

The program running the experiment was written by one of the authors (M.S.) in Turbo Pascal version 7.0 (Borland International, Inc.). The program incorporated a subroutine for ms response time calculation developed by Bovens and Brysbaert (1990). The program was stored on computer disks distributed to the participants. The participants’ response data were recorded on the same disks.

Stimuli

The stimuli were similar to those used for the monkeys and pigeons in D’Amato et al.’s (1986) research. They were a red, filled circle (35 mm diameter); a white, unfilled, inverted, equilateral triangle (45 mm sides); a white, filled circle (5 mm diameter); and a white vertical line (45 mm).

Experimental Design

The experimental design was a mixed, $4 \times [2 \times 5 \times 2]$ design. All independent variables (IV) were
within-subjects factors except task order, which was a between-subjects factor. The first IV was task order with four levels (described below in the Procedure section). The second IV was test cycle with two levels. One level consisted of IM probe trials interspersed within CM baseline trials (CM/IM test cycle), and the other level consisted of CM probe trials interspersed within IM baseline trials (IM/CM test cycle). The third IV was test session with five levels (i.e., five sessions within each test cycle). The fourth IV was trial type with two levels, baseline and probe trials.

**Procedure**

The participants received 4 practice sessions, 2 each of IM and CM, in addition to the 10 test sessions within the test cycles. Participants were randomly assigned to four different orders of practice sessions and test cycles to control for the effects of task order on performance (see Table 1). Before the first test cycle, the participants received three practice sessions. For example, participants assigned to Task Order 1 received three practice sessions, one of IM trials and two of CM trials, in the order shown in Table 1. Practice sessions for participants assigned to the other three task orders are interpreted similarly.

After the first three practice sessions, the participants began an IM/CM or CM/IM test cycle, followed by the fourth practice session, followed by the second test cycle (see Table 1). The practice session immediately preceding each test cycle involved the same type of matching task (IM or CM) as the baseline trials of the test cycle. This tactic was intended to get the participants into the IM processing or CM processing “mode” so that probe effects would be magnified (D’Amato et al., 1986).

Each practice session consisted of 48 trials, and each test cycle consisted of five 28-trial sessions. Five sessions in each test cycle were considered enough to obtain sufficient data while ensuring that the participants would not have to remain at the computers for more than one class period. Among the 28 trials that made up each session of the test cycles, 24 trials were baseline trials and 4 were probe trials. The first 4 trials of the 28 were always baseline, and within the remaining 24 trials, each successive block of 6 trials contained 1 randomly-placed probe trial (cf. D’Amato et al., 1986).

The instructor for the participants’ Experimental Psychology course introduced the participants to the study by informing them that the study would constitute their class research project for the quarter. Since the purpose of this study was to replicate and extend D’Amato et al.’s (1986) work with non-human animals, few specific instructions were given to the participants regarding the tasks. The only instructions given to participants were to try to respond correctly, and which keys to use for responding. The participants did not receive instructions to respond quickly. Upon completion of the tasks, all participants received debriefing concerning the hypotheses of the experiment, and all were given copies of their response data.

Although extraneous events could be controlled to some extent in the university computer labs, participants who performed the tasks at home may have been exposed to noise or other distractions. Participants in the computer labs performed the tasks with very short breaks between sessions. However, participants performing the tasks at home may have taken longer breaks.

At the start of each trial, the sample stimulus (either the inverted triangle or the white circle) appeared in the middle of the screen for 1 s. The sample then disappeared, and the comparison stimuli appeared on the left and right sides of the screen.

On CM trials, the correct comparison stimulus for the white circle was the vertical line, and the

### TABLE 1

<table>
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incorrect comparison stimulus was either the red circle or the triangle (determined randomly). The correct comparison stimulus for the triangle was the red circle, and the incorrect comparison was either the vertical line or the white circle.

On IM trials, the correct comparison stimulus for the white circle was an identical white circle, and the incorrect comparison was either the red circle or the triangle. The correct comparison stimulus for the triangle was an identical triangle, and the incorrect comparison was either the vertical line or the white circle.

The correct comparison stimulus appeared on either the right or the left of the screen on each trial (determined randomly). Participants pressed the decimal point key on the number pad to choose the comparison stimulus on the right, and the zero key on the number pad to choose the comparison stimulus on the left. After participants responded, the comparison stimuli disappeared from the screen, and the participants received feedback regarding their response. The word “Correct” or “Incorrect” appeared on the screen for 2 s.

**Results**

For each test cycle (IM/CM and CM/IM), two mean response times were calculated for each participant in each test session: one for the baseline trials and one for the probe trials. The baseline means for all participants were then averaged to give the mean baseline response time for each session of each test cycle. Likewise, the probe means for all participants were averaged to give the mean probe response time for each session of each test cycle. Figures 1 and 2 depict these data.

The main effect of test cycle was statistically significant, $F(1, 17) = 12.0, p = 0.003$, omega squared ($\omega^2$) = 0.03. The mean response time for all trials of the CM/IM test cycle (0.57 s) was significantly faster than the mean response time for the trials of the IM/CM test cycle (0.62 s).

The main effect of test session was also statistically significant, $F(4, 68) = 20.0, p < 0.001, \omega^2 = 0.15$. Mean response time decreased across test sessions, from 0.68 s in the first session to 0.57 s in the fifth session, averaged across the other IVs (see Figures 1 and 2).
The main finding of this experiment was that response times were significantly slower for CM probes against the IM baseline (IM/CM test cycle) but not for IM probes against the CM baseline (CM/IM test cycle). This finding is reflected in the main effect for trial type and in the interaction between trial type and test cycle. The main effect for trial type (baseline or probe) was statistically significant, $F(1, 17) = 64.2, p < 0.001, \omega^2 = 0.13$. The mean response time for baseline trials was 0.53 s, and for probes the mean response time was 0.67 s, averaged across the other IVs. Figure 1 shows probe response times are slower than baseline response times in the IM/CM test cycle, accounting for this significant difference.

The two-way interaction between test cycle and trial type was also significant, $F(1, 17) = 64.7, p < 0.001, \omega^2 = 0.13$, again demonstrating the difference between baseline and probe response times was dependent on test cycle.

Comparison of baseline and probe trials of the same type of matching task was done in a separate analysis and also revealed significant differences. IM probe trials produced significantly slower response times compared to IM baseline trials, $F(1, 20) = 23.4, p < .001, \omega^2 = 0.10$, and CM probe trials produced significantly slower response times than CM baseline trials, $F(1, 20) = 29.6, p < 0.001, \omega^2 = 0.12$.

The interaction between test session and trial type was also significant, $F(4, 68) = 7.1, p < 0.001, \omega^2 = 0.06$. The difference in mean response time between probe and baseline trials was greatest in the first test session and then decreased in the remaining test sessions.

The possibility of an effect of task order on performance was tested by comparing the mean response times of participants assigned to the four different orders of the tasks. There was no significant difference in mean response time across the task orders, $F(3, 17) = 0.51, p = .678$. However, there was a significant interaction between task order and test cycle, $F(3, 17) = 7.25, p = .002$. A Tukey’s multiple comparison test showed that for participants assigned to
Task Order 4, the mean response time in the IM/CM test cycle (0.71 s) was significantly slower than the mean response time in the CM/IM test cycle (0.57 s), \( p < .05 \). The reason this difference was only significant for Task Order 4 is not clear. However, the direction of the difference in response times is consistent with the main effect for test cycle mentioned above. Overall, response times in the IM/CM test cycle were significantly slower than in the CM/IM test cycle. This effect was due to the slower response times to probe trials in the IM/CM test cycle.

The interaction between task order and trial type was not significant; response times to probe trials were slower than response times to baseline trials in each task order. Likewise, the interaction between task order and test session was not significant. Taken together, these results indicate random assignment of participants to the four task orders provided an adequate control for effects of task order on performance.

**Discussion**

In support of D’Amato et al.’s (1986) findings for monkeys but not pigeons, the present results provide additional evidence that primates process identity and nonidentity, conditional relations in different ways. The response times to CM probes were slower than to IM baselines, but the response times to IM probes were not elevated over those to CM baselines.

Anticipation of the correct comparison stimulus is one of two factors accounting for these results. Participants could start anticipating the correct comparison stimulus during the sample duration, while the sample stimulus was still on the screen. They were able to do so because most of the trials in the test sessions were baseline trials, either CM or IM, and the participants had learned which comparison stimulus was paired with each sample in each task. When the two comparison stimuli appeared, participants could choose the one they had anticipated during the sample period.

In contrast, on probe trials the participants were not able to anticipate the correct comparison stimulus. In fact, they did not even know when a probe trial would appear and would realize that a trial was a probe only when they saw the pair of comparison stimuli. Only after the two comparison stimuli appeared could the participants decide which to choose. This difference explains why the response times on CM probe trials in IM/CM are significantly slower than on CM baseline trials in CM/IM, and why the response times on IM baseline trials in IM/CM are significantly faster than on IM probe trials in CM/IM.

The type of matching task (IM or CM) is the second factor accounting for the results. Conditional matching involves two steps, the first of which is to retrieve the correct comparison stimulus, and second, to distinguish it from the other comparison stimulus. According to D’Amato et al. (1986), identity matching can be accomplished with only the second step. Use of the matching concept during IM does not require retrieval of the stimulus associated with the sample. Because identity matching involves one less step than conditional matching, the response time to IM probes is necessarily faster than to CM probes. This use of the matching concept could account for the fast responses to IM probes in the IM/CM test cycle compared with responses to CM probes in the IM/CM test cycle (D’Amato et al., 1986).

It should be emphasized, however, that use of the matching concept cannot be concluded unequivocally in this experiment. Recall that demonstration of use of the matching concept requires tests with novel stimuli. The four stimuli presented to our participants, and those used by D’Amato et al. (1986), were the same across test sessions and trial types. The most that can be concluded is humans process identity and conditional matching in different ways. Other perceptual/cognitive processes could be involved in this differential processing. Extensions of this research in which the similarity between sample and comparison stimuli is systematically varied would provide data relevant to this question. If the difference between probe and baseline response times in the IM/CM test cycle systematically changes as a function of this similarity, then the data would seem to favor a perceptual rather than conceptual explanation (see Farrell, 1985, for a review of “same– different” processing in humans and a discussion of situations in which identity is processed more rapidly than nonidentity).

The experimental paradigm developed by D’Amato et al. (1986) and utilized in the present experiment provides a way to compare species’ abilities to process stimulus relations such as identity and nonidentity. Comparative research such as this is necessary to understand the distribution of intelligence across the animal kingdom. The recording of animals’ response times has allowed for the design of new types of experiments addressing the information processing abilities of nonhumans. Response time measures coupled with the advent of new computerized technologies for recording animals’ responses to stimuli (e.g., touchscreens) will facilitate new avenues of research in the comparative analysis of human and nonhuman intelligence.
References


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Psi Chi Research Awards

Psi Chi annually sponsors national undergraduate and graduate research award competitions, as well as regional and national research awards for members submitting the best research for the regional and national paper/poster sessions. In addition, Psi Chi has recently launched three new research award programs—the National Convention Research Awards, the Thelma Hunt Research Awards, and the Undergraduate Research Grants.

Members are encouraged to begin research papers early to submit for presentation at local, state, regional, or national conventions. Also, chapters are encouraged to provide an opportunity for members to rehearse their papers before an audience prior to presenting them at a convention. Descriptions of the award competitions follow. Further information and submission forms may be obtained from the Psi Chi National Office (see page 2).

Psi Chi/J. P. Guilford Undergraduate Research Awards

All Psi Chi undergraduate members are eligible to submit their research for the Psi Chi/J. P. Guilford Undergraduate Research Awards. Cash awards are $500 for first place, $300 for second place, $200 for third place, and $100 for honorable mentions (up to five). In addition, all winners and their faculty research advisors receive award certificates. The abstracts of the winning papers, as well as photographs and brief biographies of the top three winners, are published in Eye on Psi Chi. The deadline for this award is May 1 (postmark).

Psi Chi/Allyn & Bacon Psychology Awards

The Psi Chi/Allyn & Bacon Psychology Awards, sponsored by Allyn & Bacon Publishers, are open to all undergraduate Psi Chi members and are awarded to those who submit the best overall empirical research papers. The awards are $500 for first place, $300 for second place, and $200 for third place. In addition, all winners and their faculty research advisors receive award certificates. The abstracts of the winning papers, as well as photographs and brief biographies of the top three winners, are published in Eye on Psi Chi. The deadline for this award is April 1 (postmark).

Psi Chi/APA Edwin B. Newman Graduate Research Award

All psychology graduate students are eligible to submit their research for the Psi Chi/APA Edwin B. Newman Graduate Research Award. The winner receives the following: (1) travel expenses to attend the APA/Psi Chi National Convention to receive the...
award, (2) a three-year subscription to an APA journal of the winner’s choice, and (3) two 12" × 16" engraved plaques, one for the winner and one for the winner’s psychology department, as a permanent honor to the winner. In addition, the abstract of the winning paper, as well as a photograph and brief biography of the winner, is published in *Eye on Psi Chi*. This award is the only student research award presented during the prestigious APA/APF Awards ceremony at the APA/Psi Chi National Convention in August. The deadline for this award is February 1 (postmark).

**Psi Chi Regional Research Awards**

All Psi Chi members (undergraduate and graduate) are eligible to submit their research for the Regional Research Awards. Cash awards of $150 each are presented to students submitting the best research papers to Psi Chi sessions at regional conventions. The number of awards in each region will vary with the size of the regions; up to 78 awards of $150 each will be given in the 1996–97 year. Award monies are distributed at the conventions following the presentations. The Psi Chi regional vice-presidents each send a Call for Papers and a letter to the Psi Chi chapters in their respective regions during the fall. These letters include information about the Regional Research Awards, the regional conventions, and submission deadlines for Psi Chi programs. Deadlines for submissions vary according to region and sometimes from year to year; check your regional mailing for details.

**Psi Chi National Convention Research Awards (New)**

All Psi Chi members (undergraduate and graduate) are eligible to submit their research for the National Convention Research Awards. Cash awards of $150 each are presented to students submitting the best research for Psi Chi sessions at the APA and APS national conventions. For the 1996–97 year, eight awards will be given: four for the APA Convention and four for the APS Convention. Award monies are distributed at the conventions following the presentations. A Call for Proposals was mailed to all chapters in the fall and is also available from the Psi Chi National Office. The deadline for submissions to the Psi Chi student sessions at both the APA and APS conventions is December 16 (postmark).

**Psi Chi/Thelma Hunt Research Awards (New)**

Starting in 1996–97, all Psi Chi student and faculty members are eligible to apply for a Thelma Hunt Research Award. Up to three awards of $1,000 each will be presented annually to enable members to complete empirical research which addresses a question directly related to Psi Chi, as posed by either (1) the Psi Chi National Council, or (2) the researcher submitting a proposal. Unlike other national Psi Chi award programs, the Hunt Awards focus on research directly related to the mission of Psi Chi. The deadline for this award is September 10 (postmark).

**Psi Chi Undergraduate Research Grants (New)**

All undergraduate Psi Chi members are eligible to apply for these new undergraduate research grants. The purpose of this program is to provide funds for members to defray the cost of conducting a research project. It is expected that most grants will range from $300 to $500. The deadline for this award is October 1 (postmark).
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