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Acknowledgement - Reviewers

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The following psychology student organizations contributed financially to an endowment for the *Journal of Psychological Inquiry*. We gratefully acknowledge their valuable support and welcome contributions of \$50 or more from other groups of students.

Creighton University Psi Chi	Missouri Southern State University-Joplin Psi Chi
Emporia State University Psi Chi	Nebraska Wesleyan University Psi Chi
Midland Lutheran College Psi Chi	University of Nebraska at Kearney Psychology Club and Psi Chi

Cover Design

The creation of the graphic for the logo came about by thinking of how ideas are formed and what the process would look like if we could see into our brains. The sphere represents the brain, and the grey matter inside consists of all the thoughts in various stages of development. And finally, the white spotlight is one idea that formed into a reality to voice. The entire logo is an example of creation in the earliest stages.

Cathy Solarana, Graphic Designer

Editorial

Announcement

In recognition of her unique contribution to undergraduate research in psychology, the *Journal of Psychological Inquiry (JPI)* editors are proud to announce the commencement of the Elizabeth A. Dahl, Ph.D., Award for Excellence in Undergraduate Research.

JPI's managing editor will evaluate contributions to each issue and determine any article that merits such recognition. Ordinarily there will be no more than one selection per issue, but there is no requirement that an award be presented for each issue. The author(s) of the selected article will receive a certificate containing the following information:

“This award recognizes the distinguished contributions of Dr. Dahl, who for 25 years as faculty member and chair of the Psychology Department at Creighton University, challenged, guided, and supported numerous undergraduate students in the design and execution of research, and the scholarly communication of results.”

Biography

Elizabeth A. Dahl, Ph.D. served the Creighton University faculty for 25 years beginning in 1971. She led the department as its chair from 1985 to 1991.

Before joining the department, Betty completed a bachelor degree in 1956 at Tabor College with emphases in music (concert piano) and elementary education. Subsequently, she worked in the Lawrence and Overland Park public schools as a teacher, school psychologist, and director of a gifted program. During those years, she also worked on and completed a master's degree in psychology from Kansas State Teachers College (Emporia State University) in 1959. Betty also raised four children and supported her husband, Carl, in completing medical studies and a plastic surgery residency. The culmination of her academic training consisted of obtaining a doctoral degree at the University of Nebraska-Lincoln in 1977 with a concentration in developmental psychology.

During her tenure at Creighton, Betty was a tireless and humane mentor for students and faculty. Former students and faculty commented on Betty's contributions.

Each semester, I observed from 2 to 5 students trailing in and out of her office. The reason for this procession was Betty's strong dedication to involving students in all phases of research. Betty actively engaged students in conceptualizing the problem, collecting and analyzing data, and writing manuscripts and presenting results at psychology conventions.

She was compassionate and truly cared for students. She did not hesitate to go out of her way to help those needing assistance, putting in long hours and sacrificing free time for the sake of preparing for and attending conventions involving student presentations. I was continually amazed at her dedication and involvement in such activities.

Her interactions with students and the projects she undertook were always completed in a most ethical manner. She truly provided students with a most appropriate role model.

Among her professional contributions was Betty's unparalleled dedication to nurturing students' involvement in scholarly investigation. For the last 20 years of her time at Creighton, Betty sponsored 75 students who made 50 presentations in 10 different venues, including the American Psychological Association, Southwestern Psychological Association, Great Plains Students' Psychology Convention, and the National Building Family Strengths Conference. Even after her retirement, Betty provided financial support for student scholarship with her contributions to the *Journal of Psychological Inquiry*.

Mark E. Ware
Managing Editor

Instructions for Contributors

The *Journal of Psychological Inquiry* encourages undergraduate students to submit manuscripts for consideration. Manuscripts may include empirical studies, literature reviews, and historical articles; manuscripts may cover any topical area in the psychological sciences. Write the manuscript for a reading audience versus a listening or viewing audience.

1. Manuscripts must have an undergraduate as the primary author. Manuscripts by graduates will be accepted if the work was completed as an undergraduate. Graduate students or faculty may be co-authors if their role was one of teacher or mentor versus full fledged collaborator.
2. Manuscripts must (a) have come from students at institutions sponsoring the Great Plains Students' Psychology Convention and the *Journal of Psychological Inquiry* or (b) have been accepted for or presented at the meeting of the Great Plains Students' Psychology Convention, the Association for Psychological and Educational Research in Kansas, the Nebraska Psychological Society, the Arkansas Symposium for Psychology Students, or the ILLOWA Undergraduate Psychology Conference. The preceding conditions do not apply to manuscripts for the Special Features Sections I, II, or III.
3. Send original manuscripts only. Do not send manuscripts that have been accepted for publication or that have been published elsewhere.
4. All manuscripts should be formatted in accordance with the APA manual (latest edition).
5. Empirical studies should not exceed 15 double-spaced pages; literature reviews or historical papers should not exceed 20 double-spaced pages. The number of pages excludes the title page, abstract, references, figures, and tables. We expect a high level of sophistication for literature reviews and historical papers.
6. The *Journal* requires five (5) copies of the manuscript in near letter quality condition using 12 point font.
7. Provide e-mail addresses for the author(s) and faculty sponsor.
8. Include a sponsoring statement from a faculty supervisor. (Supervisor: Read and critique papers on content, method, APA style, grammar, and overall presentation.) The sponsoring letter should indicate that the supervisor has read and critiqued the manuscript. In addition, assert that the research adhered to the APA ethical standards. Finally, confirm that the planning, execution, and writing of the manuscript represents primarily the work of the undergraduate author(s).
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11. Ordinarily, the review process will be completed in 60 days.
12. If the editor returns a manuscript that requires revisions, the author(s) is (are) responsible for making the necessary changes and resubmitting the manuscript to the *Journal*. Sometimes you may have to revise manuscripts more than once.

2/06

Send submissions to:

Mark E. Ware, Managing Editor
Journal of Psychological Inquiry
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 Omaha, NE 68178

Checklist:

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Body Image Perception and Dissatisfaction

Rachael Daniels, Amber Dirkschneider, and Tamika Butler

Creighton University

Body dissatisfaction contributes to distorted ideals among young people about how they should look. The purpose of this study was to explore the effect of media images on body perceptions. Forty participants viewed either beautiful, average, or no images of men and women, then took a survey about self-perceptions and body images. Data revealed that after watching images of beautiful people, participants' self-confidence surprisingly increased significantly compared to the control group. These findings were contrary to the results of previous studies. Generally women had lower self-confidence than men. There was a strong correlation between the way women wanted to look and the ideal female body image. Our divergent findings provide alternate insight into today's growing body image problem.

Magazines inundate readers with pictures of beautiful people; beautiful people who are grossly thin, contain no noticeable fat on their bodies, and are very well dressed. Such images of men and women fill the pages and ultimately affect the readers, whether men or women. Unfortunately, this influence presents a problem. Average people in today's society perceive a demand to look like supermodels, a look increasingly hard to achieve (Tiggemann & Slater, 2003). The ideal female body, represented in the media is 15% below the average weight of women, tall, and characterized by thin legs and thighs with slender hips (Hawkins, Richards, Granley, & Stein, 2004). Many different sources communicate beauty standards, such as parents and peers, but media are more likely to influence views of social norms than any other sources (Tiggemann & Slater). Thompson and Heinberg (1999) and Hargreaves and Tiggemann (2003) attest to media's influence on beauty standards. Internalizing these almost unattainable ideals can lead to negative affect, body dissatisfaction, and eating disorders (Groesz, Levine, & Murnen, 2002). Groesz et al. stated that internalization of unattainable ideals is a problem that affects adolescent girls and boys, as well as adult men and women.

Many studies have investigated the impact of thin ideals presented in television commercials, music videos, and erotic video tapes on body perceptions, and have found consistent results. Not only does the mass media

portray unrealistic ideals, but it also plays a fundamental role in body dissatisfaction (Tiggemann & Slater, 2003). Tiggemann and Slater used a sample of 84 women to determine if viewing thin women, specifically in music videos, resulted in female participants socially comparing themselves to the women in the videos and ultimately led to greater body dissatisfaction. Social comparison occurs when participants compare their own body image to the current social standard. Results affirmed that viewing thin women led to increased social comparison and body dissatisfaction in women. Furthermore, even brief highlights of music videos with thin, beautiful women could lead to increased dissatisfaction (Tiggemann & Slater).

Hargreaves and Tiggemann (2003) investigated body dissatisfaction of South Australian adolescents, ages 13 to 15 years old and the effects of watching television on ideals of female attractiveness. Researchers measured body dissatisfaction at three different times; immediately before, immediately after, and 15 min after participants viewed either commercials with thin female body images or "nonappearance television commercials" (Hargreaves & Tiggemann, p. 367). Researchers defined nonappearance television commercials as commercials without the appearance of thin females. Findings were that adolescent girls who viewed commercials depicting thin models were more dissatisfied with their bodies than girls who did not see images of thin models. These results were the same whether measured immediately or 15 min after commercial viewing, confirming that young girls have persistent negative thoughts for at least 15 min after viewing the pictures.

Lokken, Ferraro, Kirchner, and Bowling (2003) expanded the previously defined concept of body dissatisfaction by using the Attention to Body Shape Scale (ABS) and the Body Image Assessment (BIA) in their study. The major contribution of this study was the addition of the previously used concept of body dissatisfaction by introducing the idea of body focus. Whereas body dissatisfaction measures the difference between how people perceive themselves and how they ideally would like to look, body focus provides the added dimension of why

Cynthia Gibson from Creighton University was faculty sponsor for this research project.

people resort to dieting to gain peer acceptance (Lokken et al.). Using the ABS and the BIA, Investigators found differences between the sexes; women were more body focused than men. In addition, women with the lowest levels of body focus still had more dissatisfaction with their bodies than men. Lokken et al. argued that societal views might contribute to the lower body focus and lower dissatisfaction among men. There is less of an agreement in society about what the ideal shape is for men compared to women.

Building on the importance of media influences, Posavac and Posavac (2002) investigated whether a woman's vulnerability to media effects was contingent on self-media ideal discrepancy rather than self-esteem. The authors asserted that major discrepancies occurred when a woman compared her body to thin images in the media. When there were large discrepancies between her own attractiveness and that of the images, she was more likely to display weight concerns.

Current research indicates that after exposure to some type of mass media, body dissatisfaction increases for women. Hawkins et al. (2004) found higher body dissatisfaction levels among women who viewed magazine images of thin, idealistic women than participants who viewed neutral images. However, the study only included women, and participants viewed pictures of thin, beautiful women for 30 min from binders, thus allowing them to focus on pictures at their leisure. Stice and Shaw (1994) reported results that also supported a link between body dissatisfaction and exposure to magazine images. This study also included only women.

Although research findings offer evidence for dissatisfaction in women, the current study explored how magazine images of beautiful people impacted both women and men. We hypothesized that after seeing images of thin, beautiful people in magazine cutouts taken from assorted magazines (e.g., *Family Circle*, *Cosmopolitan*, and *VIBE*) women would have increased body dissatisfaction. We also hypothesized that men, after seeing the same images, would either not be affected by them or would have little body dissatisfaction resulting from them. The operational definition of body dissatisfaction was a high self-consciousness, a distorted perception of current body type, or low self-ratings on specific body parts and zones such as hips, thighs, face, buttocks, and stomach.

Method

Participants

Researchers administered an image survey to students, primarily from introductory psychology classes and some from research methods classes, enrolled at Creighton University, a small, private, Midwestern Jesuit university. A total of 40 students (16 in the control group shown no images, 9 shown images of average looking people, and 15 shown images of attractive looking people) participated in this study. The majority of the students who participated in the study were Caucasians with a few Asian-American participants. The average age for the participants was 19 years.

Participants received no financial incentives, but they did receive credit for participation from their instructors. Students gave informed consent or assent and parental permission (for underage students). Creighton University's Institutional Review Board approved the study.

The study used a manipulation check to determine if participants agreed with the researchers on the attractiveness of the images. Inclusion criteria required that the perceived attractiveness of the pictures matched the classification (i.e., either beautiful or average). The manipulation check revealed all but three male participants agreed with researchers on the attractiveness of the images. Researchers excluded data from the three male participants.

Materials

Materials included consent or assent forms, a survey, two PowerPoint presentations, and debriefing forms. Section one of the survey required students to rate their self-confidence by answering several questions about their bodies on a Likert scale (1 = *strongly agree*, 6 = *strongly disagree*). Examples of these questions included, "I am self-conscious about my appearance" and "I am satisfied with my current weight." Section two asked students to rate how often they used weight control methods, such as dieting, vomiting, and laxatives. Participants responded to a Likert scale (1 = *often*, 4 = *never*). Section three addressed feelings about specific body parts and zones, such as the stomach, lower body, and face, rated on a Likert scale (1 = *very satisfied*, 5 = *very dissatisfied*). The fourth section asked students to look at drawings of male and female body images, ranging from very thin to obese. Students circled the image that best described them, the one they wanted to look like, the ideal female

body, and the ideal male body. Images varied from 1 (*thinnest*) to 8 (*obese*). Finally, section five asked for demographic information. This survey, a mixture from various other body perception surveys, came from the university’s Division of Student Services.

A PowerPoint presentation showed magazine pictures of unknown people, either beautiful or average. Each slide show contained four images of men and four images of women. The pictures included diverse ethnic groups such as Caucasian, Asian, African American, and Hispanic. To control for variability, persons in the images group were either standing or leaning slightly and showing at least two-thirds of the body. The debriefing form informed participants about the study’s hypotheses.

Procedure

A typical classroom was the setting for the study. Researchers verified participants’ identification or parental consent forms. Students received two copies of either the consent form or assent form; participants signed and returned one form to the researcher and kept the other form. Participants viewed a PowerPoint presentation consisting of eight pictures (either of beautiful or average looking people). Participants saw each picture for about 4 s, lasting for a total of about 32 s for all eight pictures, or viewed nothing at all. Three sign up sheets determined group selection for different sessions. Following the presentation, researchers distributed the survey for participants to complete. After finishing the survey, participants sat quietly until everyone finished. Researchers then collected all surveys and distributed two debriefing forms; participants signed and returned one form to researchers, and they kept the other form. Finally, researchers gave participants a form verifying their participation and dismissed them.

Results

We conducted a 3 (group) x 2 (sex) between subjects ANOVA to determine the effects of media images and sex on body satisfaction. The main effect for sex on body self-confidence was significant, $F(1, 34) = 7.03, p < .05, g = .35$. The male participants’ scores ($M = 3.17$) were significantly lower than the female participants’ scores ($M = 3.35$). Because higher numbers indicated lower self-confidence, female participants had a lower body image than male participants.

Researchers also found a significant effect for the type of group (i.e., control, beautiful, or average), $F(2,$

$34) = 3.726, p < .05$. A Fisher LSD post-hoc test revealed that the beautiful group ($M = 3.047$) was significantly more self-confident than the control group ($M = 3.426$). We used Hedges g ($g = .75$) because we were interested in the effect size between specific groups. We found no other group differences. The interaction between sex and group, although significant, was not meaningful because there was no variability (only $n = 1$ in the male average group).

A 3 (group) x 2 (sex) between subjects ANOVA compared weight control methods and revealed no main effect for groups, $F(2, 34) = .137, p > .05, \eta^2 = .00013$. There was no main effect for sex, $F(1, 34) = .819, p > .05, \eta^2 = .0004$, nor for the interaction between group and sex, $F(2, 34) = 1.5, p > .05, \eta^2 = .0014$.

A 3 (group) x 2 (sex) ANOVA on the satisfaction of each body zone likewise revealed no main effect for group, $F(2, 34) = 1.265, p > .05, \eta^2 = .0041$, no main effect for sex, $F(1, 34) = 2.850, p > .05, \eta^2 = .0046$, and no significant interaction, $F(2, 34) = 1.620, p > .05, \eta^2 = .0052$. Thus, we were unable to find group or sex differences on dieting techniques or body specific satisfaction.

Lastly, we conducted Pearson correlations using four variables: current body type, preferred self body type, ideal female body, and ideal male body. Table 1 contains the results of these Pearson calculations. We also analyzed data separately for women and men. Table 2 contains the significant correlation for women. We did not find any significance correlations among the men.

Table 1

Correlation Matrix of Body Image Variables for Women and Men Combined

	Current Look	Preferred Look	Ideal Female Body	Ideal Male Body
Current Look	--	.349*	.320*	.471**
Preferred Look		--	.765**	.270
Ideal Female Body			--	.287

* $p < .05$

** $p < .01$

Table 2

Significant Correlations of Body Image Variables for Women

	Current Look	Preferred Look	Ideal Female Body	Ideal Male Body
Current Look	--	.55*	.68*	.59*
Preferred Look		--	.70*	.49*

* $p < .05$

Discussion

We hypothesized that after viewing images of thin, beautiful people in magazine cut outs women would have an increased body dissatisfaction level. The researchers also hypothesized that after viewing these same images men would either have little body dissatisfaction or that there would be no effect. The data partially supported these hypotheses. Body dissatisfaction did vary by sex. However, participants who viewed the beautiful people did not have lower body image scores than those viewing average looking people. By contrast, we found that participants who viewed beautiful people had a higher self-body image than participants who viewed average people.

Tiggemann and Slater (2003) found that even after brief exposure to media images of beautiful people, women had increased body dissatisfaction; we found that women had greater body dissatisfaction when they view beautiful versus average people. However, we found that participants who viewed beautiful images were significantly more self-confident than participants who viewed no images at all. There could be several reasons for this inconsistency with previous research. For instance, participants' history could have played a part for the results of those who viewed the beautiful images. That is, perhaps participants in this group were more beautiful, making them self-confident to begin with, and thus they were not influenced by these images. Another explanation may be that participants, after viewing these images, thought that they were as beautiful as the images, thus increasing their own self-confidence.

The results of the present study were also inconsistent with those of Hargreaves and Tiggemann (2003). We did not find a significant difference for weight control methods. Thus, no matter what group the participants were in or what sex they were, there were no significant differences in weight controlling methods on body perceptions. Hargreaves and Tiggemann found that women may take negative actions, like becoming anorexic or bulimic, to lose weight. Hargreaves and Tiggemann also showed that women had greater dissatisfaction than men with their bodies. The dissatisfaction among women is also not consistent with the results of the present study on how the participants felt about certain areas of their bodies. We measured the satisfaction with each body zone (i.e., hips, thighs, face, buttocks, and stomach), but found no significant differences.

There may be several reasons for inconsistencies in results between our study and that of Hargreaves and Tiggemann (2003). Hargreaves and Tiggemann used adolescent participants, whereas we used college participants. Also, Hargreaves and Tiggemann used commercials in their study, and we used magazine cutouts. Perhaps the people in the commercials were more famous or familiar. Using famous people might have led participants to think that because they frequently saw the people on television their beauty was more representative of people in general. The magazine advertisements included unknown people. Fame and familiarity, therefore, may be important variables for further investigation.

The present study included men because most research has focused on how the media affects women's body dissatisfaction and consequently omits men. However, the scores for the men in the average image group were significantly lower than all the other means. After the excluding three participants, only one participant remained in that group. Therefore, there was no variability and the interaction effect was probably an artifact.

Correlational analyses revealed significant positive relationships between current body image and preferred self body image, the ideal female body, as well as the ideal male body. These correlations represented participants in the beautiful, average, and control groups. Among women, current body image was significantly correlated with the preferred self body image and the ideal female body. This finding was consistent with the data of Tiggemann and Slater (2003), which provides supporting evidence that women have a desire to look like what they perceive as the most attractive female body. Women, therefore, wish to look thinner, emulating the images of thin, beautiful models.

The effect size indices were noteworthy. For instance, there was a large effect size for the self-confidence of participants who viewed beautiful images and a medium effect size for the lowered self-confidence of women. The study found medium to large effects for current body image, preferred self body image, the ideal female body, and the ideal male body. These effect sizes indicate that media images have a large impact on body satisfaction and body image.

Some limiting factors in the current study, which future studies should consider include small sample size ($N = 40$), low male representation, and a homogeneous sample. The small sample size and small number of men ($N = 17$) may limit external validity because diversity of participants was low, especially in the average image group. Additionally, this sample consisted of participants from a small, private, academically challenging, Midwestern Jesuit university. These characteristics may contribute to participants having elevated self-confidence compared to other college students.

Another limitation was the pictures we used. The benefit of using mass produced pictures is that they provide realistic representations of what a person encounters while reading a magazine. However, the benefit of using mass produced pictures may be offset by having models who were not dressed the same way, did not have the same facial expressions, and did not all have the same body size.

Furthermore, we used different researchers for each of the groups, which inadvertently introduced a confounding between researchers and groups. Each experimenter was of a different ethnic background - Caucasian, African American, and Indian American. The experimenters' ethnic backgrounds may have affected each group's self-perceptions. We had some diversity among individuals in the pictures and in the sample of participants. A refinement of the study would have an equal representation of ethnic minorities and Caucasians across groups and images. Finally, this study only had three groups: control, beautiful, and average. Future studies could include a below average image group and use one researcher across groups.

Despite these limitations, results of the current study are instructive. Understanding the impact of media on self-perceptions may allow teachers, parents, and support groups to address issues related to body perception, such

as self-confidence and eating disorders. Providing healthy peer norms and helping young people recognize that the media portrays unrealistic norms of beauty that they can use to resist low body perception and extreme weight loss attempts (Thompson & Heinberg, 1999). Research findings have shown that prevention and even early intervention programs that build awareness of media methods and teach skills for rejecting media fabrications have shown positive results (Thompson & Heinberg). This type of research could also help develop programs to prevent eating disorders in people most at risk.

The present study focused on college-aged students. Further research needs to concentrate not only on college-aged students, but also on junior high and high school-aged students, whose body dissatisfaction is the most prominent (Heatherton, Mahamedi, Striepe, Field, & Keel, 1997). Cross-cultural studies could assess the amount of media exposure participants receive on average. Americans may be exposed to more forms of media than many other countries. American participants may have more or less self-esteem and self-confidence than participants from other countries because of this difference in media exposure.

Future research should ask if or how often participants look at fashion magazines. Additionally, studies should look at how certain magazine (e.g., fashion) images affect the self-confidence and expectations of pre-teens. Perhaps this age group is more susceptible to these types of media images than older individuals.

Another important aspect of body satisfaction is peer influence, which may be related to other demographic characteristics such as socioeconomic levels and ethnic identity. Future research should also include more pictures and include images of famous people in the beautiful group. Seeing famous people could cause participants to perceive larger discrepancies between their level of attractiveness and that of models in their group and thus have a greater or different impact.

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Cross-Sectional Analysis of Gender Stereotype Perceptions and Self-Ratings of Gender

Connie S. Frank and Susan Burns

Morningside College

This study measured the predictability of participant sex, self-perceived masculinity and femininity scores on ratings of gender-oriented tasks in 5th-grade, 7th-grade, and college-age students. Participants completed age-appropriate Bem Sex Role Inventory forms and surveys regarding perceptions of gender-oriented tasks and characteristics. Regression analyses indicated that for all participant groups the only significant predictor for ratings of male-oriented tasks and characteristics was participants' sex. Analysis of variance using grade (5th, 7th, and college) as an independent variable indicated no age difference on ratings of masculine tasks and characteristics. Further, there were no significant multiple regression predictors for ratings of female-oriented tasks and characteristics. However analysis of variance yielded a significant effect of grade on ratings of feminine tasks and characteristics.

Gender is part of a person's identity, which as a theoretical construct is not limited to its association with the biological differences between male and female physical development. As individuals develop cognitively and socially, they also learn gender equality to discern the types of activities and social roles that they perceive as appropriate for their gender. Gender equality in the United States has markedly improved since the days when women did not have the right to vote and were not allowed to work outside the home. Currently, women are much more prominent in the work force and employers more readily accept them as supervisors, managers, and bosses. Likewise, men are taking more active roles in household tasks and child rearing. Although some stereotypical gender beliefs prevail, we may assume that the majority of these stereotypical beliefs are diminishing among children because they have grown up in a society with increasing gender equality.

Researchers have given much attention to and diversity in explanation to the topic of stereotype development. Although there is no specific age for all children, research has suggested that gender stereotype beliefs develop early in life (Poulin-Dubois, Serbin, Eichstedt, Sen, & Beissel, 2002). One explanation for the development of stereotypes is that children learn from modeling parental behavior. That "women's work" maintains its

status as a gender stereotype is because mothers are primarily responsible for work associated with child rearing. Further, most fathers continue to work outside the home to support their families, therefore maintaining the stereotypical label of "bread winner." Renk et al. (2003) studied gender differences in parenting. They hypothesized parents, both men and women, who demonstrated feminine qualities, would spend more time and take more responsibility in child rearing than parents who demonstrated masculine qualities. These authors also predicted that parents, both men and women, who showed masculine qualities, would be more pleased with their parenting responsibilities and capabilities than feminine-oriented parents. Renk et al.'s findings indicated that the parents possessing feminine qualities did spend a great deal more time with the children and were considered the children's primary caregiver; whereas the parents with masculine qualities spent less time with the children, which supported their hypothesis. Renk et al.'s results also indicated that feminine parents rated themselves as less satisfied with their parenting skills than masculine parents. Not surprisingly, feminine parents were mostly women and masculine parents were mostly men, which reinforces the idea that feminine parents who exert more time and effort in their parenting skills are in fact women, supporting the role of gender stereotype modeling by parents.

In addition to parental modeling, researchers have also used sibling dynamics within the family to explain the development of gender stereotypes. Research has indicated that men are more heavily stereotyped than women when considering family dynamics (Van Volkom, 2003). That is, many men may feel that engaging in tasks that are "feminine" is not socially acceptable. However, the reverse is not true. That is, women behaving in a masculine way is not as socially controversial. Van Volkom studied gender stereotypes in the context of "tomboys" and their sibling's influence and activities. Van Volkom hypothesized that female children's Tomboy Index scores would be positively correlated with the neutral, masculine or feminine activities of their siblings. Burn, O'Neil, and Nederend (1996), designed the Tomboy Index to assess participants' tomboyish behaviors in childhood.

Susan Burns from Morningside College was the faculty sponsor for this research project.

Burn et al. found that scores on the Tomboy Index were positively related to participants' own assessments of whether they were tomboys as children. Van Volkom found that masculine activities were positively correlated with the girls' tomboy scores, but the feminine scores were not correlated to the Tomboy Index. Van Volkom also found that neutral activities were positively correlated with the tomboy scores. This finding may indicate that the masculine and neutral activities of siblings predicted tomboy scores of young girls and that feminine activities may not predicted tomboy scores. This study suggests that stereotype development is not solely based on parental modeling, but rather all family dynamics, including siblings, play a role.

In a related manner, McHale, Crouter, and Whiteman (2003) suggested siblings served as both direct and indirect influences on gender role development in children. Direct sibling influence consists of social interaction and modeling of gendered behavior, whereas indirect influence includes social comparison of behavior.

Fagot (1977) reported that education plays a large role in shaping stereotypes in young children through reinforcement of stereotyped activities. Fagot's research on the influence of teachers and peers on 3- and 4-year-olds' participation in cross-gender activities help to explain why gender stereotypes begin to develop at a young age. Fagot observed 3- and 4-year-old children over a period of 6 years in a preschool classroom setting. The researcher watched for eight specific gender-preferred activities and found that when boys engaged in female preferred activities, such as dress up and playing house, they received verbal reprimand and verbal redirection from the teacher. Likewise, girls received the same types of response from the teacher for participating in male preferred activities, such as playing in the mud and sand and using building blocks. In addition, boys also received punishment from female peers when playing with kitchen toys. The finding that peers only reprimanded participation in cross-gender activities in one situation indicates that the adult's punishment, more than peer punishment, contributed to the development of gender stereotypes.

Chick, Heilman-Houser, and Hunter (2002) found that gender stereotypes and inequalities continued to exist in the educational setting. The investigators collected data in a childcare center for children in five age categories (i.e., infants; young toddlers, ages 1- 2; older toddlers, age 3; young preschoolers, age 4; and older

preschoolers, age 5). Researchers placed the children into these age categories based on social and cognitive developmental abilities. Examples of gender inequalities may perpetuate gender stereotypes included: boys received greater amounts of attention than girls; boys of the toddler and preschool ages exerted more power and control; girls of all ages received verbal reinforcement from teachers for their dress, hairstyles, and prosocial/nurturing behaviors; and boys received verbal reinforcement for their strength and physical skills. However, these researchers also found support for breaking gender stereotypes and barriers. For example, girls received reinforcement for athletic interest and desire for "male-dominated careers," and boys received reinforcement for participation in "female-dominated" activities.

Data from additional studies examining educational activities, such as reading, are consistent with previous findings, implying that educational activities continue to play a role in the development of gender stereotypes. Gooden and Gooden (2001) studied gender stereotypes in children's books. They reported that in 83 books there were 25 different men and boys as main characters playing a variety of different roles. However, only 14 women and girls were main characters, and all of them played stereotyped roles, such as housewives and grandmothers. Because of children's prevalent exposure to books in the educational setting, this covert display of gender stereotypes has had an influence on children's beliefs. Children are increasingly exposed to the Internet as a tool for education. Interestingly, Laver (2004) found, that when analyzing websites specifically designed for children (e.g., www.barbie.com and www.hotwheels.com), there was a strong gender stereotype presence. Gender stereotypical messages are prevalent in various forms within and outside of the educational system.

The effect of early exposure to gender stereotypical information within the educational and family also transfers to other aspects of children's beliefs. Research findings have also indicated that children generalize gender stereotype beliefs to perceptions of adult careers. In a study concerning gender stereotypes in occupations, Levy, Sadovsky, & Troseth (2000) found that boys rated men as much more competent than women at predetermined masculine careers, and girls rated women as substantially more competent than men at predetermined feminine careers. These findings provide insight into why children quickly develop stereotypical beliefs and externalize those beliefs in their behaviors.

Hughes and Seta (2003) presented 100 5th-grade students, ages 10 and 11 years old, with a list of traits and occupations and asked them to rate traits such as, applicable to men, women, or both men and women. Next, they divided children into groups. They asked some children to imagine a man engaging in a feminine task, whereas they asked other children to picture a woman performing a masculine task. After presenting this cognitive task, researchers asked the children if another person of the same gender would perform that task. Children responded on a Likert scale of 1 to 5 (1 = *not at all likely*; 5 = *definitely likely*). The researchers found that when they asked children to imagine a woman performing a traditionally masculine task and a man performing a traditionally feminine task, the children generated more strict compensatory expectancies, for the men performing feminine tasks, which suggested that the children saw men as more heavily stereotyped than the women. This finding means that the children's view of gender appropriate activities for men became stricter for other members of the same sex to compensate for the cognitive break of the gender stereotype. The compensatory expectancies for the women were not as strict, suggesting that women performing masculine tasks is more socially acceptable in the children's view than for men performing feminine tasks. This finding means that although the participants were asked to cognitively break a gender stereotype by imagining a woman completing a masculine task the participants did not compensate as much as they did for the men, by making more strict stereotypes for gender appropriate activities for others in the same gender category.

Researchers have also identified gender stereotypes in social situations. Heyman and Legare (2004) examined children's perceptions of gender differences in social and academic areas. They asked children questions concerning academics, (e.g., who would be better at math) and social questions, (e.g., who would hit another kid). Children pointed to one of the pictures representing a balanced and random selection of boys' and girls' photos. In another condition, the investigators asked children the same questions without the pictures; children responded either, girls or boys. Results indicated that girls who attributed academic success with girls (not stereotypical) also attributed aggressiveness with boys (stereotypical). Findings also revealed that children, who associated girls with pro-social behaviors (stereotypical), associated boys with aggression too (stereotypical). Children in this study also rated themselves within the domains of socialization and academics, and the results indicated that the children did not attribute the same gender stereotypes to themselves as they had to the others of their gender.

The present study examined the predictability of participants' sex and self-perceived masculinity and femininity on their gender stereotype beliefs for traditionally masculine and feminine tasks and characteristics. Additionally, because research suggests that young children versus adults have more rigid stereotypes concerning men and women (Golombok & Fivush, 1994), we hypothesized that younger children (i.e., 5th graders) would be more stereotypical in their beliefs than older children (i.e., 7th graders) and college-age participants.

We also expected that the more masculine the participants perceived themselves, the more they would hold stereotypical beliefs toward male tasks and characteristics, and the more feminine the participant rated themselves, the less stereotypical they would be in their ratings of both male and female tasks and characteristics. We derived this hypothesis from previous research findings (e.g., Chick et al., 2002; Fagot, 1977; Hughes & Seta, 2003) suggesting that the breaking stereotypes is allowed for individuals who are deemed "feminine" (typically girls and women), but not individuals deemed "masculine" (typically boys and men). Perhaps persons who have this flexibility would in turn be more flexible in ratings of stereotypical behavior than persons not experiencing socially granted gender flexibility.

Method

Participants

Thirty-five 5th grade students (14 boys, 21 girls), from a Midwest private Catholic elementary school comprised the young-child sample, ranging in age from 10 to 12 years. Thirty-four 7th graders (12 boys, 22 girls) from the same private Catholic middle school comprised the middle-child sample, ages 12 to 13 years. The final sample was 30 students from a small private liberal arts Methodist college (10 men and 20 women) ranging in age from 19 to 34 years. Although ethnicity was not of primary interest, the majority of the participants in each of these samples was Caucasian.

Materials

All child participants' parents or legal guardians received a letter briefly describing the study with a permission slip attached, whereas college students had the opportunity to sign an informed consent form.

Participants in 5th- and 7th-grades completed the Children's Bem Sex Role Inventory (CBSRI; Stericker & Kurdek, 1982) to assess their self-perceived gender roles.

CBSRI rates personal characteristics on a 4-point Likert-type scale (1 = *never*, 2 = *almost never*, 3 = *almost always*, and 4 = *always*). In the version for the present study, there were 16 stereotypical feminine characteristics and 16 stereotypical masculine items. An example of a feminine characteristic on the CBSRI is "I am eager to soothe hurt feelings," and a masculine characteristic is "I am willing to take risks." The masculine and feminine characteristics were intermixed with distracter characteristics that were not gender specific (e.g., "I am happy."). Prior to data analysis, child participants' scores were summed for each of the subscales of masculine and feminine items.

Additionally the 5th- and 7th-graders received a questionnaire designed to assess their gender stereotype perceptions of other people. Participants answered questions about characteristics on a 5-point Likert scale (1 = *males only*, 2 = *more males than females*, 3 = *equal for both sexes*, 4 = *more female than male*, and 5 = *females only*). This scale included 5 stereotypical masculine and 5 stereotypical feminine tasks and characteristics. An example of a stereotypical feminine characteristic question was, "Who expresses their emotions?" and a stereotypical masculine question was, "Who is better at math?"

The college students completed the Bem's Sex Role Inventory (BSRI; Bem, 1981), which rates gender identity using a 7-point Likert-type scale (1 = *never true of me* to 7 = *always true of me*). This scale contains 20 stereotypical masculine items, 20 stereotypical feminine items, and intermixed 20 distracter items that are not gender specific (e.g., friendly). An example of a stereotypical feminine characteristic is "affectionate," and a stereotypical masculine example is "competitiveness." Scoring is such that items on the masculine and feminine subscales are summed prior to data analysis.

College students also completed a questionnaire to assess demographic information including age, sex, marital status, and academic standing, as well as a questionnaire to assess their gender perceptions of masculine and feminine tasks and characteristics, rated on the same 5-point Likert scale previously described. This scale, similar to the child form, included 5 stereotypical masculine and 5 stereotypical feminine tasks and characteristics. A feminine characteristic that the college students rated was "emotionality," whereas a masculine characteristic was

"risk taking."

Procedure

Prior to data collection, the college and elementary school administration and teachers reviewed and approved all materials for participants under the age of 18 years. Parental consent was also obtained for each child participant.

We obtained the 5th- and 7th-grade sample data during a class period; we used the same procedure with both groups of participants. There were two groups (predetermined by class enrollment) for each grade. Participants were not randomly sampled, a limitation we discuss later in this article. Participants left the surveys face down until everyone had received them. Participants then turned over their surveys and followed along as the experimenter read the directions aloud. Researchers assured participants there were no right or wrong answers and asked them to keep their eyes on their own papers.

Participants completed the CBSRI first, which was not labeled as such to avoid potential bias and put down their pencils when they finished. After everyone had finished, participants flipped to the next page of the survey packet, which contained the survey of their gender perceptions of other people. Students followed along with the directions and put down their pencils when they finished. Researchers gave participants an opportunity to ask questions and thanked them as a group at the end of the survey. Because of time constraints during data collection and a desire to share a summary of the results, debriefing consisted of researchers distributing a brief summary and findings of the project to students, parents, and teachers at a later date.

The college participants received extra credit in a psychology class for their participation. Participants filled out an informed consent form and completed the BSRI, which was not labeled as such to avoid bias, a demographics sheet, and the gender stereotype questionnaire during a class period. Participants were allowed an opportunity to ask questions, thanked, given a debriefing handout, and dismissed after they completed the survey.

Results

Male-Oriented Tasks and Characteristics

To understand the affects of masculinity and femininity on ratings of gender stereotypes, participants' self-ratings of masculinity and femininity on the age-appropriate BSRI were summed. We conducted separate regression analyses because the child and adult forms of the BSRI used different rating scales (i.e., 4-point Likert-type scale for the child version and 7-point Likert-type scale for the adult version) and had different amounts of items (i.e., 16 items on each subscale for the child version and 20 items on each subscale for the adult version). Participants' ratings of male-oriented and female-oriented tasks and characteristics were averaged.

We used age-segregated, step-wise multiple regression analyses to analyze the predictability of participant sex and self-perceived masculinity and femininity scores on ratings of gender-oriented tasks. Regression analyses indicated that out of the following variables for both 5th- and 7th-grade and college students participant's sex, masculinity, and femininity scores, the only significant predictor for ratings of male-oriented tasks and characteristics was participants' sex (see Table 1 and Table 2). Specifically, when making ratings of male-oriented tasks and characteristics, boys and men were more stereotypical in their ratings of those characteristics. An additional one-way ANOVA utilizing grade (i.e., 5th, 7th, and college) as the independent variable, and masculine tasks and characteristics ratings as the dependent variable yielded no significant differences between the three grade categories on ratings of male-oriented tasks and characteristics.

Table 1

Ratings of Masculine-oriented Tasks and Characteristics for 5th and 7th Graders

Predictor	<i>B</i>	<i>p</i>	Variance
Participant Gender	.49	.0001	24.4%
Self Ratings of Femininity	.01	.916	
Self Ratings of Masculinity	.08	.415	

Table 2

Ratings of Masculine-oriented Tasks and Characteristics for College Students

Predictor	<i>B</i>	<i>p</i>	Variance
Participant Gender	.48	.007	23.3%
Self Ratings of Femininity	-.13	.447	
Self Ratings of Masculinity	-.33	.070	

Female-Oriented Tasks and Characteristics

Age-segregated, stepwise regression analyses also indicated that from among the following variables, participant sex, masculinity, and femininity, there were no significant predictors for ratings of female-oriented tasks and characteristics for children or college students. However, one-way ANOVA with grade (i.e., 5th, 7th, and college) as the independent variable and feminine tasks and characteristics ratings as the dependent variable yielded a significant difference in grade on ratings of female-oriented tasks and characteristics, $F(2, 95) = 17.92, p < .0001$. Follow-up Tukey post hoc analyses indicated that 5th ($M = 3.97$) and 7th grade ($M = 3.78$) students did not differ significantly from each other in their ratings, however both 5th and 7th graders differed from college students ($M = 3.46$). Again, ratings on this scale are such that a higher score (i.e., closer to 5) represents participants' beliefs that only women should complete the feminine task. Thus, the present finding demonstrates that children were more stereotypical in their ratings of feminine tasks and characteristics than college students.

Discussion

Although there has been a shift toward gender equality in the United States since the time when women were not allowed to vote or hold jobs outside the home, this study demonstrated that gender stereotypes have not completely disappeared in children and adults. The hypothesis that younger children would be more stereotypical in their beliefs about gender-stereotyped tasks and characteristics than older children and adults was partially supported. Consistent with previous research

(Golombok & Fivush, 1994), the 5th and 7th grade participants, although not different from each other in their ratings, were more stereotypical than the college participants in their ratings of feminine, but not masculine tasks and characteristics.

In a study on the development of masculinity and femininity in middle childhood, which used the Children's Personal Attitudes Questionnaire (CPAQ), the data reported by Absi-Semaan (1993) support the present findings. Absi-Semaan's sample consisted of 251 girls and 266 boys in grades 2nd through 7th in three suburban elementary schools. Findings indicated that both boys and girls responded in a more feminine way than in a masculine way in the second and third grades. The author suggested that this finding may be the result of younger children not having as much access to certain masculine gender roles, meaning that they have not yet established stable gender roles, which inhibits their ability to understand and apply gender specific stereotypes.

The finding in the present study that 5th grade and 7th grade participants were more stereotypical than the college participants in their ratings of feminine (but not masculine) tasks and characteristics suggests that the strictness of feminine stereotypes is because of more accessibility and familiarity with feminine roles. This familiarity causes a more stable set of feminine stereotypes and a less stable set of masculine stereotypes, making it easier to be stricter in beliefs with regard feminine stereotypes and less strict with beliefs concerning masculine stereotypes. However this connection is only speculation based on Absi-Semaan's (1993) research, which had similar findings to the present study and could possibly help explain why our 5th and 7th grade participants were more stereotypical of feminine tasks and characteristics than college participants. To validate this hypothesis of stability in and accessibility to mental sets regarding masculine and feminine stereotypes, we need more research on gender stereotype development from a cognitive stance.

Our findings did not support the hypothesis that (a) the more masculine participants perceived themselves the more they would hold stereotypical beliefs toward male tasks and characteristics and (b) the more feminine the participants rated themselves the less stereotypical they would be in their ratings of both male and female tasks and characteristics. However, the present results indicate that a person's sex (rather than self-perceived masculinity and femininity) is more important in understanding ratings of male, but not female tasks and characteristics. Specifically, boys and men were more stereotypical in

their ratings than girls and women of male tasks and characteristics. There was no parallel finding for female tasks and characteristics. These findings are not surprising because previous research (e.g., Chick et al., 2002; Hughes & Seta, 2003; Fagot, 1977) has consistently demonstrated that other people reinforce boys and men to behave stereotypically and likewise punish them when their behavior is inconsistent with gender stereotypes. Thus, this conditioning may cause them to be more stereotypical with regard to tasks associated with their sex.

An area for improvement of this study and suggestion for future research involves the spacing of the cross-sections more evenly by the age category, ideally by 2 years, between each age category to allow the detection of developmental change between age groups. The present study also might have benefited by expanding the number of cross-sections to encompass preschoolers through adults. Although the cross-sections were well matched, this characteristic obviously limits generalization of the present findings.

When considering gender stereotypes in education, distinguishing between private, parochial, and public school systems is important. Some of the differences between these school systems that might influence gender role and stereotype development are the presence of uniform or dress codes, the teaching of religion, the family income level, and ethnicity. To have a more accurate understanding of the development of gender stereotypes among children, future research should draw samples from all of these school sectors. As previously noted, all participants (both child and adult) in the present study were enrolled in religious affiliated school systems (i.e., Catholic elementary school and Methodist affiliated college), which may limit generalization of the results of the current study. Not only should future studies focus on broadening the spectrum of school sectors, they should also draw samples from cities of various sizes. This expansion would also address the lack of diversity in ethnicity in the present study.

Another concern with the current study was the standardization of survey administration. Specifically, we adjusted the administration instructions appropriately depending on the age of participants (i.e., having an experimenter read instructions out loud to children, vs. having adult participants read the instructions to themselves). This difference in procedure might have introduced a measurement bias between groups. However, minor alterations in instructions dependent on age of participants is common in cross-sectional research (e.g., Barnett et al., 2000).

Regardless of these limitations, we concluded that when making judgments of male-oriented tasks and characteristics, children in religious affiliated schools in small urban communities are more gender stereotyped in their beliefs about masculine tasks and characteristics in comparison to college-age participants enrolled in religious affiliated schools, and boys and men are more gender-restrictive in ratings than girls and women. Although the United States has made tremendous strides in its effort toward gender equality, gender stereotype perception continue and constitute an interesting topic for research.

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Age-Related Memory Loss

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Age-related memory loss is a mild form of naturally occurring cognitive decline. This article presents the nature of age-related memory loss along with variables affecting risk and techniques to minimize memory loss because of normal aging. I discuss the specific areas of frontal lobe processing, source memory, recall, familiarity, culture, and metacognition and their relationship to age-related memory loss. Not all individuals will experience the same memory decline; several variables place individuals at risk for a more dramatic memory decline. There is also discussion of interventions that can minimize some effects of memory loss.

In the United States, 40% of adults over 65 years old, or 16 million Americans, suffer from memory-loss because of aging (Small, 2002). Within the next three years, 80 million Americans will be entering their 60s (Lawson, 2003), an age that is stereotypically associated with retirement, dentures, and slow driving. Although many older individuals frequently return to school, open businesses, and train for athletic competitions (Lawson), physical and cognitive changes occur because of the normal aging process. Although still leading active and intellectually challenging lives, many adults suffer from forgetfulness (Simensky & Abeles, 2002). Age-related memory loss, the mildest form of memory impairment, is identified by self-perception and memory tests (Small). There is not a typical age of onset; memory loss tends to occur gradually over time until it hinders a person in such ways as misplacing keys or forgetting appointments (Meisler, 2002). This article describes the nature of age-related memory loss along with variables affecting risk and techniques to minimize memory loss because of normal aging.

Frontal Lobe Processing

Many processing-intensive activities such as learning new material, recalling information, reconciling competing information, and reaction responding are located in the frontal lobe. These activities show a decline with age and thus suggest weakening of the frontal lobes (Meisler, 2002). The frontal lobes are instrumental in organizing and attending to unorganized verbal memory throughout the lifespan; they are a critical variable in age-related memory loss because verbal memory for older adults

seems to decline because the to-be-remembered information is less organized (Simensky & Abeles, 2002). Participants who performed poorly on frontal lobe tasks (e.g., the Stroop Task and Wisconsin Card Sorting Test) also recalled significantly less unorganized information than those participants who completed the frontal lobe measures with more success. Poor frontal lobe processing could decrease the speed with which participants process information and thus lead to poorer memory abilities (Simensky & Abeles).

Source Memory

Not all memory declines with age. For example, crystallized memory, the accumulation of learned information (Kaplan & Saccuzzo, 2001), may continue to develop with age (Christensen, 2001). Skills that rely on knowledge, such as language, are moderately well protected from deterioration (Meisler, 2002). However, the aging process affects source memory, the ability to recall the origin of remembered information. Researchers attempted to facilitate source memory by assessing older individuals' (median age = 74 years) source memory using a more lenient yes-no recognition format instead of a recall format. Despite using an experimental approach that attempted to enhance source memory, scores still showed a loss that was twice as large as item memory loss (Wegesin, Jacobs, Zubin, Ventura, & Stern, 2000). In the same study, investigators found a negative relationship between participants' ages and their use of semantic clustering in remembering word lists. Participants who employed mnemonic strategies such as semantic clustering showed greater ability to remember the source of the information. These results suggested that source memory declines at a disproportionate rate as compared to remembering information content. Wegesin et al. contended that the frontal lobes play a role in this memory decline as well.

Recall and Familiarity

Older and younger participants differ when evaluating learned information. Older participants tend to report "knowing" the information, whereas younger participants

Isabelle Cherney from Creighton University was the faculty sponsor for this research project.

report “remembering” the learned information. Older relative to younger participants use less explicit recollection and rely more on implicit recollection (Parkin & Walter, 1992). Explicit recollection occurs when memories are consciously recalled, and implicit recollection is not conscious, but the recalled memories show evidence of previous learning (Galotti, 2004).

Parkin and Walter (1992) explained decreased recollection performance in older individuals as relying on the implicit tactic of familiarity when recalling information. Older individuals base recollection on past experiences that are familiar to them to remember new information. Interestingly, Knopf and Neidhardt (1989) showed that decreased recall of older adults is constant regardless of the level of familiarity with the stimulus material. Older adults tend to use familiarity and implicit tactics when recalling information even though these strategies do not necessarily enhance performance (Knopf & Neidhardt; Parkin & Walter).

Cross-Cultural Similarities

If memory loss is a typical experience for many Americans as they age, how do these findings generalize to other cultures? Cross-cultural researchers (e.g., Crook, Youngjohn, Larrabee, & Salama, 1992; Larrabee, McEntee, Youngjohn, & Crook, 1992) suggested that declining memory performance with increasing age is a common human experience. In their study, Crook et al. compared Belgians and Americans on memory tests such as facial recognition, name-face association, misplaced objects, telephone dialing, divided attention tasks, and first and last name matching. The tests were sensitive to cultural differences (e.g., using rotary phones for the Belgian population and touch-tone phones for Americans). The tests yielded no differences in memory performance between the cultural groups, and older members of each group performed more poorly on the memory tasks than did the younger members. From these results, the experimenters concluded that age-related memory loss is a universal human experience (Crook et al.).

Metacognition

Are elderly persons aware of their decreasing ability to remember information? Perrig-Chiello, Perrig, and Stahelin (2000) reported that 65% of the elderly people in their study admitted that their memory performance was rather poor. However, although most elderly participants rated themselves poorly, they still rated themselves as performing better than their peers.

In contrast, Devolder, Brigham, and Pressley (1990) suggested that older adults do not have accurate metacognition, but metacognition does not decrease with age. Interestingly, the researchers found that both younger and older participants had relatively inaccurate metacognition and there were no significant age differences.

Risk Factors

Memory loss exists in the elderly population; however, not everyone experiences cognitive decline to the same degree. Several variables place a person at a greater risk for decreasing memory abilities. Lifestyle risk factors include a lower educational level, a low level of physical activity, and smoking (Christensen, 2001; Small, 2002). Chronic stress is also detrimental to cognitive health. When stress hormones (especially cortisol) exist in excess, damage is likely to occur in the hippocampus, an area of the brain involved with memory and learning. Chronic stress can also lead to depression and anxiety disorders, which can negatively affect memory, especially in aging persons (Small). Diet is an important variable for cognitive health. Overweight individuals are at a higher risk for developing certain illnesses such as diabetes and hypertension, both of which increase the risk for cerebrovascular disease which in turn often leads to dementia and memory decline (Small).

Other chronic ailments such as inflammatory-rheumatic disease, auto-immune disease, and cardiovascular disease may damage the brain, particularly the frontal lobes (Christensen, 2001; Meisler, 2002). For fibromyalgia, the reasons remain unclear for why cognitive functioning declines. Meisler stated that women with fibromyalgia cognitively perform at the same level as healthy women 20 years older. Even though the dramatic decline in cognitive ability is related to changes in the brain, the specific changes are not yet identified (Meisler).

The presence of the Apo-E4 allele in a person’s genetic makeup increases the risk for mental deterioration. The genetic marker is a precursor to Alzheimer’s disease, a condition that hinders memory beyond normal age-related loss. Preventing this disease and distinguishing whether or not the Apo-E4 gene will actually lead to Alzheimer’s disease are ongoing research challenges (Meisler, 2002).

Personality differences may be a potential memory loss risk factor. For example, extraversion is positively correlated with episodic and free recall memory performance ($r = .22$ and $.14$, respectively) whereas neuroticism is negatively correlated with both types of memory per-

formance ($r = -.16$ and $-.23$, respectfully) (Meier, Perrig-Chiello, & Perrig, 2002). Although the relationship between neuroticism, aging, and memory loss may be small, the stable underlying personality factor could have long-term effects on cognitive abilities (Meier et al.). Typically, viewing aging as a natural and positive experience can motivate a person to take responsibility for his or her health, thus reducing some of the lifestyle variables that often do lead to memory deterioration (Lawson, 2003).

Gender's role in the rate and severity of age-related memory loss is still unclear. Meisler (2002) reported that women exhibited a greater rate of memory loss than men. However, Perrig-Chiello et al. (2000) found no gender differences in memory loss. Limited research exists in the area of gender and age-related memory loss, and that area is important for future research.

Escaping any memory loss is probably not possible. Memory decline appears to be an inevitable, gradual process for elderly adults (Christensen, 2001). However, Lawson (2003) cautioned that age-related memory loss might be more dramatized by individuals with poor memories who attribute this condition to their age. In either case, individual differences exist, and some strategies exist to decrease the intensity of memory loss.

Minimizing Memory Loss

Many of the variables affecting risk described earlier are lifestyle choices. Avoiding smoking and excessive use of alcohol lessens the effects of cognitive decline. Quitting smoking, at any time in life, will reduce a person's risk of memory loss (Small, 2002). Planning ahead, setting reasonable expectations, taking breaks, and establishing a balance between work and leisure can reduce stress (Small). A brain-healthy diet may closely resemble a heart-healthy one (Meisler, 2002) and includes drinking water, eating low fat foods, fruits, and vegetables, and taking sufficient amounts of vitamins E and C (Small).

Individuals can maintain mental activity well into old age by completing crossword puzzles, reading, and other such activities. Activities that have personal meaning are the most effective at guarding against memory decline (Small, 2002). Relocating, traveling, planning events, caring for a pet, and socializing slow the rate of age-related memory loss because these activities keep the mind engaged and expose individuals to unfamiliar situations that challenge their minds. The harder a person works the brain, the healthier it remains. Physical activity also provides several benefits by keeping a person fit and improv-

ing sleep, which optimizes cognitive functioning. When less fatigued, cognitive functioning may increase (Meisler, 2002).

Conclusion

The brain operates much like other organs. An 80-year-old's heart may be functioning quite well though doubtfully operating at the same level as when the person was 20 years old (Meisler, 2002). Studies focused on frontal lobe processing, source memory, recall and familiarity, and cultural similarities often suggest that we can expect some memory decline with age (e.g., Christensen, 2001; Kaplan & Saccuzzo, 2001; Meisler; Parkin & Walter, 1992; Simesky & Abeles, 2002; Wegesin et al., 2000) and that declining memory performance with age may be a universal experience (Crook et al., 1992). Certain variables affecting risk, such as chronic stress, low levels of physical activity, poor diet, chronic diseases, and personality differences, may place certain individuals at greater risk for age-related memory loss (e.g., Christensen; Meisler et al., 2002; Meisler; Small).

To establish causal relationships between individual variables, specifically gender and genetics, and actual memory loss in older adults requires additional research (Christensen, 2001). Results from longitudinal studies could help prevent a person with a poor memory attributing the loss to old age when in fact it has been present throughout his or her entire life. Professionals should emphasize awareness of preventative measures, such as refraining from smoking and excessive alcohol use, planning ahead, balancing work and leisure time, maintaining a healthy diet, and continuing mental activity well into old age, across the lifespan.

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Workplace Violence: Predictors and Policy

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This article reviews some of the variables affecting risk associated with workplace violence. Researchers categorize risks into three types: workplace risk factors, perpetrator characteristics, and victim risk factors. I discuss risk assessment, threat assessment, and policy implications, which could reduce the impact of risk factors. Future research areas include risk factor identification, reporting methods, and intervention effectiveness.

In response to a few highly publicized incidents of extreme violence committed by postal workers against coworkers and customers, the term “going postal” (“To become extremely angry or deranged especially in an outburst of violence.”) entered American slang in the mid-1990s (Yahoo Online Dictionary). Unfortunately, such a term facilitates public misconceptions about workplace violence occurrence, severity, and perpetrators.

At its peak in 1994, reported workplace homicide claimed the lives of 1,080 workers and earned the rank of second leading cause of worker fatality in the United States (Bureau of Labor Statistics, 2003). Note that workplace homicides occur in the workplace setting, not just homicides committed by employees against their coworkers. According to the 2002 National Census of Fatal Occupational Injuries (NCFOTI), workplace homicide within the United States has dropped by 44% since 1994, which makes it the third leading cause of worker fatality, below highway incidents and falls (Bureau of Labor Statistics). The NCFOTI reported there were 609 workplace homicides in 2002, which accounted for 11% of U.S. worker fatalities (Bureau of Labor Statistics).

In addition to workplace homicides, workplace violence also encompasses non-fatal physical violence. Workers in the United States are more likely to be victims of non-fatal violence than fatal violence (Bureau of Labor Statistics, 2001). Although reported assaults and violent acts comprised less than two percent of all non-fatal worker injuries in 2001, there were approximately 24,000 reported incidents of workplace violence related injury that resulted in days off from work (Bureau of Labor Statistics). According to the Bureau of Labor Statistics, most workers experienced perpetrators who hit, kicked, or beat them, but there were also several

severe assaults with a weapon. For example, during 2001, there were 439 shootings and 269 stabbings at workplaces within the United States (Bureau of Labor Statistics). The resulting injuries ranged from mild sprains to amputations. The reported injuries, listed by decreasing prevalence, were sprains and strains, bruises, cuts and puncture, fractures, and amputations. Approximately 1,500 victims sustained multiple types of injuries. In addition to pain and time off, victims probably incurred medical costs and emotional distress. The number of workplace violence victims and the resulting injuries and costs demonstrate the need for workplace violence prediction, prevention, and intervention strategies.

Definition of Workplace Violence

We need a clear conceptualization of workplace violence to focus prevention and intervention efforts. The Occupational Safety and Health Administration (OSHA, 2002) defined workplace violence as, “the threat of violence or violence against workers, which ranges from threats to verbal abuse to physical assault to homicide.” Similarly, Fletcher, Brakel, and Cavanaugh (2000) described workplace violence as any violence that is work related and negatively affects the productivity and safety of an employee. Wilkinson (2001) viewed workplace violence as a continuum spanning from homicide to physical assault to verbal threats. Peek-Asa, Runyan, and Zwerling (2001) included both fatal and nonfatal violence in their definition of workplace violence. Although much of the research encompasses all type of workplace violence in its definition, some research makes a distinction between workplace aggression and workplace violence. This distinction is partly because of the research’s focus on verbal assaults, threats, sexual harassment, and intimidation in addition to the traditional focus of physical assaults (Fletcher et al.). According to LeBlanc and Kelloway (2002), physical assaults and threats of assault directed toward employees constituted workplace violence. However, behaviors such as yelling and swearing, fall under the category of nonphysical aggression. Neuman and Baron (1998) made the distinction between

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workplace violence and workplace aggression. They argued that this distinction was necessary to combat the tendency to focus on severe physical violence cases or homicides, when using one term. Neuman and Baron described workplace violence as extremely aggressive acts that involve a direct physical assault. Workplace aggression is any intentional attempt to harm another coworker, former coworker, or the organization without the use of physical assault.

Neuman and Baron (1998) further subdivided workplace aggression onto expressions of hostility and obstructionism. Expressions of hostility are usually verbal and symbolic aggressive acts, such as dirty looks, silent treatment, gossip, verbal sexual harassment, and belittling. Obstructionism refers to behaviors that have the purpose of impeding job performance, such as not returning calls, intentionally slowing down work, using materials that someone else needs, and failing to warn someone about danger. All of these acts of workplace aggression are included in most definitions of workplace violence, such as the OSHA definition.

Overall, the definitions have one thing in common: a violent incident occurs at the workplace. However, the definitions differ on the issue of violence severity. That is, some definitions consider verbal abuse and physical violence as violent behavior, whereas other definitions equate workplace violence strictly with physical violence. Instances of non-physical workplace violence occur more frequently than instances of physical violence, which illustrates a need for prediction and policy for this type of violence. This article focuses on workplace violence prediction and policy, and therefore the term workplace violence encompasses physical violence, threats, and verbal abuse that occur in the workplace.

Types of Workplace Violence

To understand incidents of workplace violence, OSHA (1995) differentiated workplace violence into three categories based on the relationship between victim and perpetrator. Type I workplace violence involves a perpetrator who does not have a legitimate relationship with the organization, such as a robber. Criminal activity such as robbery, often precedes violence in this category (Peek-Asa et al. 2001). Type II violence involves a perpetrator who receives service or has received service from the organization, such as customers, clients, patients, or passengers. The perpetrator usually becomes aggressive during a business transaction. In Type III workplace violence, the perpetrator has an employment relationship with the organization or a relationship with

an employee. Type III workplace violence involves current employees, former employees, spouses, relatives, and friends. This type of workplace violence is the most publicized, but also one of the least prevalent (Peek-Asa et al.).

Researchers often address all types of workplace violence, or they state what type of violence the study investigated (LeBlanc & Kelloway, 2002; Peek-Asa et al., 2001; Wilkinson, 2001). However, some researchers have issues with OSHA's types of workplace violence. For example Neuman and Baron (1996; 1998) considered Type III workplace violence as true workplace violence, and therefore their studies only focused on Type III violence. Conversely, Peek-Asa et al. think that there should be a fourth category of violence. The fourth type of workplace violence would identify incidents in which the perpetrator has a personal relationship with an employee. This instance would include a former or current spouse, romantic partner, friend, or relative (Peek-Asa et al.).

Subdividing workplace violence into types illustrates that workplace violence is more than coworker homicide. Policymakers also need to consider external threats, such as thieves and aggressive customers. Furthermore, noting the type of relationship between perpetrator and victim is beneficial in creating and implementing intervention strategies for specific populations.

Predictors

Workplace violence consists of three necessary components; the workplace, the perpetrator, and the victim. To predict workplace violence effectively, researchers have tried to discern the variables of risk for each of these components.

Workplace Risk Factors

There are numerous environmental variables associated with workplace violence. Poor physical environmental conditions, such as poor lighting, extreme temperatures, cramped conditions, and uncomfortable conditions, are tied to increased risk of workplace violence (Flannery, 1996; Harley, Riggan, Jolivet, & Christle, 2002; LeBlanc & Kelloway, 2002; Neuman & Barnon, 1996, 1998; Rai, 2002). These conditions put strain on the body, which, in turn, can exasperate other ongoing stressors.

Increased diversity in the workplace is another risk factor for violence (Harley et al., 2002; Neuman & Baron, 1996, 1998; Rai, 2002). As diversity increases, the

opportunity for discrimination, racism, hate crimes, and stereotyping increases. Communication problems can occur between individuals of sharply different backgrounds. Perceptions of unfair treatment can arise if someone thinks that certain groups have unwarranted privilege.

Changes in the organizational structure of the work environment, such as management changes, job sharing, use of part time employees, budget cuts, and pay freezes, are associated with increased risk of violence (Flannery, 1996; Harley et al., 2002; Neuman & Baron, 1996). Organizational change can be an additional stressor for many employees. For example, Neuman and Baron surveyed 178 full-time employees from a diverse range of work settings about direct experiences of workplace aggression, witnessing workplace aggression, and the changes in the workplace. The researchers found significant relationships between experienced and/or witnessed aggression and organization changes. Specifically, experienced aggression was significantly positively correlated with increasing diversity, employee monitoring, management changes, pay cuts or freezes, and use of part-time employees. Furthermore, multiple regression analyses found that changes in management and use of part-time employees were significant predictors of witnessed aggression. Part-time employees and pay cuts or freezes are associated with increased risk for violence, and increased workplace diversity predicted experienced workplace aggression.

Researchers also believe that norms could encourage violence in the workplace (Harley et al., 2002; Neuman & Baron, 1998; Rai, 2002). Neuman and Baron suggested some organizational cultures celebrate norms for aggressive competition (e.g., “a survival of the fittest” attitude). Societal obsession with the pursuit of power, money, and success could influence behavior as well (Harley et al.). Also, a violation of social norms could encourage retaliation. For example, part-time employment, job sharing, and temporary employment are now challenging an accepted norm for long-term employment. Moreover, job-sharing and use of part time employees are associated with aggressive behavior. Finally workers may think that aggression and verbal abuse are just regular aspects of work. Unfortunately, if workers believe aggressive behavior is expected on the job, they will not feel the need to report such behavior (Neuman & Baron).

Perpetrator Characteristics

In addition to risk factors within the workplace, there are perpetrator characteristics associated with violence.

Perhaps the strongest predictor of violence in general is a history of past violence, and evidence suggests that this variable also holds true for workplace violence (Harley et al., 2002; Scalora, Washington, Casady, & Newell, 2003). Furthermore, most perpetrators of workplace violence are men (Harley et al.; Scalora et al.). Many perpetrators think that they have been treated unfairly or discriminated against (Flannery, 1996; Harley et al.; Neuman & Baron, 1998, Rai 2002; Scalora et al.). For example, perpetrators often have a monetary dispute or customer service dispute with the business.

Mental illness is associated with increased risk for violence, but most people who commit workplace violence are not mentally ill (Harley et al., 2002; Rai, 2002; Scalora et al., 2003). Substance abuse is also correlated with increased violence in the workplace (Flannery, 1996; Harley et al.). If the perpetrator has access to weapons, the risk for violence and the severity of potential violence increases (Flannery; Harley et al.; Rai; Scalora et al.).

Scalora et al. (2003) highlighted some of the major perpetrator risk factors found in the research literature. The investigators examined perpetrator characteristics during their review of 281 incidents of workplace violence. Using police reports and databases, researchers identified workplace incidents in retail, non-retail, and government locations. The investigation reviewed the relationship between workplace violence and factors such as the perpetrator and the victim’s relationship, use of weapon, threats, intensity of violence, prior criminal history, gender, witnesses, and motive.

Professionals classified perpetrators as external threats or internal threats. External threats were not employees at the workplace or related to employees. Internal threats were employees or had a significant relationship with an employee (e.g., domestic violence situations). Sixty-three percent of the sample involved external threats, the majority of which were robberies. Conversely, internal threats made up 32.7% of the incidents, the majority of whom were related to domestic violence. The most common motives across the entire sample were a perceived mistreatment, relationship issues, monetary, or sexual. Men committed acts of workplace violence more often than women. Overall, the majority of victims were women, but perpetrators were more likely to assault men physically. Many external threats became physically assaultive during customer service disputes. Threats were inversely related to assaultive behavior (i.e., perpetrators who threatened victims were less likely to physically assault victims further than per-

petrators who did not threaten victims).

Interestingly, in both external and internal threat cases, the presence of witnesses increased the likelihood of assault. This finding seems counterintuitive because the presence of witnesses increases the chance of the perpetrator being injured by someone coming to the victim's aid. In addition, a witness's description and testimony increase the chances for intervention by the police and conviction in court. One explanation for this finding is that some perpetrators want to embarrass the victim by assaulting him or her in front of an audience. Another explanation is that some perpetrators feel justified in their actions, and they assume the witnesses agree with their justifications. Finally, some perpetrators simply feel the satisfaction gained by assaulting the victim is worth any kind of risk. In the end, this finding suggests that the safety in numbers policy may not apply (Scalora et al. 2003).

Perpetrators with prior police contact were more likely to assault victims in both external and internal threat incidents. Internal threats (coworkers and "relatives") in this sample were more likely to have had prior police contact than the external threats. Furthermore, a coworker relationship, compared to a domestic violence relationship, had a larger association with physical assault (Scalora et al., 2003).

Victim Characteristics

The potential victim is the final element for consideration when assessing the risk of workplace violence. LeBlanc and Kelloway (2002) surveyed 254 employees, representing 71 different occupations, about job characteristics and experiences of violence. Researchers used the Risk for Violence Measure to analyze job characteristics. The measure contained 28 items, rated on a five-point scale ranging from 0 (*never*) to 4 (*always*). Twenty-two of the 28 job characteristics were significantly correlated with the employees' self-reported experiences of violence. Some of the job characteristics significantly associated with increased risk for violence were: physical care of others, emotional care of others, deny the public a service or request (this mirrors the perpetrator risk factor of perception of unfair treatment), work alone, discipline others, handle weapons, handle valuables, guard valuables, contact with individuals under the influence of medication and/or alcohol, and exercise physical control over others. Male employees were at an increased risk of being severely assaulted, assaulted with a weapon, and killed (Scalora et al. 2003). If most of the perpetrators are men, maybe some of the victim gender differences are because of the social stigma of beating a woman, or per-

haps male employees escalate the situation more than female employees. Maybe the findings are because men tend to work jobs that are susceptible to severe violence or fatal violence, such as prison work, police work, or upper management, rather than jobs more susceptible to nonfatal violence.

Risk Factor Interactions

Based on their review of literature, Neuman and Baron (1998) proposed a theoretical model that describes the potential causes of workplace violence. This model, which attempts to explain coworker violence, views aggression as a complex behavior resulting from an interaction between situational factors, social factors, personality factors, emotions, and thoughts. Most of the situational and social variables present in the model are the workplace risk factors and perpetrator characteristics described earlier.

The risk for violence increases as the number of risk factors increases. However, some risk factors pose more of a threat than others in certain situations. Therefore, the model tries to put these risk factors into a larger context. The model addresses the interaction among risk factors, as well as the interaction between risk factors and context. Specifically, the model illustrates that certain combinations of risk factors are more dangerous than other combinations. For example, a combination of the model's social factors, personal determinants, and internal states presents a greater risk than a combination of risk factors within one category. Also, according to the model's cognitive appraisal facet, how a person views the context affects his or her response. For example, the risk for violence increases in contexts where individuals are intentionally treated unfairly (or at least perceive intentional unfair treatment) and will suffer limited consequences for their actions.

This model is valuable because it provides a fuller explanation for workplace violence through static and dynamic variables. Static variables are risk factors that remain constant such as past history of violence, gender, and personality traits. Dynamic variables are risk factors that can change such as emotions, intoxication, relationships, organizational restructuring, and downsizing. Understanding static and dynamic variables is beneficial for the risk assessment process because it provides a more complete picture of the topic. Static risk factors are always present, but static variables become exasperated in the context of dynamic risk variables. For example, there is a greater risk of violence associated with a person's past history of violence (static variable) when he or

she is afraid of being laid-off because of recent downsizing at work, is abusing alcohol, and is in an unhealthy relationship than when none of the dynamic risk variables are present.

The model also provides many opportunities for positive intervention. Each component of the model has issues that professional can address to decrease the risk of workplace violence. Most instances of workplace violence are not fatal. Consequently, the perpetrator will either continue working for the organization or will need to get another job. A more complete understanding of why a person committed violence can help authorities prevent that person from committing future violence. Finally, professionals can identify certain stressors for each individual and predict what type of work environment he or she should avoid.

Policy Implications

Risk factors for workplace, perpetrator, and victim and theoretical models provide information that authorities can use to develop risk assessment tools and threat assessment techniques. For example, LeBlanc and Kelloway (2002) developed the Risk for Violence Measure to assess risk as a component of job characteristics. The measure, which has high test-retest reliability and higher interrater agreement, could be used by organizations to determine which positions are at an increased risk for violence. Once the organization has determined these at-risk positions are determined, it can more effectively direct money toward security equipment and training for these positions. This strategy would be especially helpful for businesses with limited security funding.

Scalora et al. (2003) also identified some discriminating risk factors through their review of 281 incidents of workplace violence. Using discriminant analysis, Scalora et al. found that perpetrators who physically assaulted their victims differed from perpetrators who did not become assaultive. These groups of perpetrators differed on variables such as the perpetrator-victim relationship, motive, prior threats, prior police contact, gender, presence of witnesses, and suspected mental illness. In external threat cases, a discriminant function differentiated the perpetrator groups (assaultive group vs. non-assaultive group). The function correctly categorized 84.3% of the assaultive perpetrators into the assaultive group and 88.6% of the non-assaultive perpetrators into the non-assaultive group. Similarly, a discriminant function differentiated the perpetrator groups of internal threat cases. For the internal threat cases, the function correctly categorized 84.3% of the assaultive perpetrators and 82.2%

of the non-assaultive perpetrators. These functions, which are derived from multiple risk factors, help employers when assessing a troublesome employee's general risk for violence.

There are limitations of risk assessment. Risk factor research is incomplete and assessment of individual cases is imperfect. The basis for risk factors is aggregate data. Therefore, risk assessment does not predict whether or not an individual will be violent, but rather generates a rough estimate of the odds for future violence. Finally, violence is a low base level behavior, and predicting its occurrence is difficult (Meloy, 2000). Thus, psychologists have a responsibility to understand the limitations of risk assessment and to explain these limitations to management who might incorrectly use risk factors to discriminate against potential or current employees.

Authorities use another technique called threat assessment to evaluate the risk of violence. Threat assessment tries to estimate the threat of violence for a specific target (e.g., the President); thus its focus is narrower than risk assessment (Borum, Fein, Vossekuil, & Berglund, 1999). Threat assessment looks for behaviors and thought patterns that indicate an individual is preparing to become violent. For example, behaviors such as buying a weapon, warning others, threatening, making plans for attack, and discussing plans, are considered during a threat assessment. Threat assessment also considers traditional risk factors such as previous history of violence, access to weapons, and work context. A threat assessment principle is that there is an understandable process of thinking and behavior that results in violence. Therefore, the model's cognitive appraisal section can help threat assessors to generate questions to ask employees. For example, if one employee is having problems with another employee, the assessor could ask the employee if he or she interpreted previous incidents as intentional attacks. An employee who thinks that an aggressive act was intentional may justify retaliating with violence. Furthermore, the assessor could ask the employee about his or her perception of the consequences of a violent retaliation. An employees who does not identify as many negative consequences or does not perceive the consequences as serious may be at increased risk for committing violence.

Unfortunately, threat assessment has the potential to harm employees just as risk assessment does. Threat assessment provides an estimate for the risk of violence toward a specific target; it cannot perfectly predict violence. Professionals need to perform these assessments or supervise management because misuse of the technique

can cause false positives errors - predictions of violence by individuals who will not become violent (Meloy, 2000). For example, such errors could ruin individuals' reputation at work; they could be unfairly fired or suspended, or coworkers might feel anxious interacting with them. They could also experience psychological distress because of additional stress, anxiety, or embarrassment. Responsible persons should use risk and threat assessment cautiously and as discretely as possible.

There can also be benefits for interventions that reduce the occurrence and impact of workplace, perpetrator, and victim risk factors. For example, poor physical environmental conditions such as inadequate lighting, extreme temperatures, cramped conditions, and uncomfortable conditions, are associated with workplace violence (Flannery, 1996; Harley, et al., 2002; LeBlanc & Kelloway, 2002; Neuman & Baron, 1996, 1998; Rai, 2002). These conditions put strain on the body, which could exasperate other stressors. Organizations need to make sure that their employees are comfortable. Investing in quality lighting and comfortable furniture and maintaining the same temperature throughout the year would be beneficial to employees. Although these solutions are straightforward, they also can be expensive. Companies need to provide a basic level of comfort and try to budget for optimal conditions. If adequate funding is not available for meeting all conditions, the company should survey employees and meet the conditions that employees indicate are in the greatest need of improvement.

Increased diversity in the workplace is another risk factor for violence that can organizations can address (Harley et al., 2002; Neuman & Baron, 1996,1998; Rai, 2002). Harley et al. advocated for proactive intervention in diversity issues. For example, employers should not ignore but rather acknowledge cultural differences. Management of employees should not be standardized and benefits should reflect employee performance. Pamphlets, discussion sessions, or classes can transmit information about cultural differences. Interventions dealing with diversity could be extremely valuable as the cultural makeup of the United States changes.

Researchers advocate changes in the organizational structure of the work environment, such as management changes, job sharing, use of part-time employees, budget cuts, and pay freezes (Flannery, 1996; Harley et al., 2002; Neuman & Baron, 1996). Stress management procedures help employees deal with the stress of workplace changes in healthier ways. Social support is a buffer against stress (Taylor, 2003). Exercise is also an effective stress reduc-

er (Taylor). Larger corporations could build an onsite workout room or rent space at a health club and offer employees a discount. Furthermore, employees who work out together have an opportunity to vent to each other and de-stress. Relaxation training also effectively reduces stress (Taylor). An Employee Assistance Program could provide training, provide referrals for such training, or post basic suggestions in the public areas.

Researchers suggest examination of norms for aggression and competition within the workplace (Harley et al., 2002; Neuman & Baron, 1996, 1998; Rai, 2002). Changing the norm for competition in a capitalistic society is impossible. However, management could stress an environment of cooperation and couple it with zero tolerance policies. Wilkinson (2001) suggested a zero tolerance policy that would not tolerate threats or violence but recommended that incidents should not result in automatic firing. Punishment for aggressive non-violent acts, such as intentionally impeding the work of a coworker, might also prove valuable. Such an act would not result in firing, but management could tell the employee that his or her behavior would jeopardize a promotion or a bonus.

In addition to addressing risk factors within the workplace, perpetrator characteristics should be the focus of workplace violence prevention efforts. For example, many perpetrators believe that they have been treated unfairly or discriminated against (Flannery, 1996; Harley et al., 2002; Neuman & Baron, 1998, Rai, 2002, Scalora et al., 2003). Employers should provide with information about how to recognize an escalating hazardous situation. Teaching employees appropriate precautions and procedures to follow during a dispute with a customer or a coworker and training in de-escalation techniques could be beneficial. In the absence of teaching of de-escalation techniques to all employees, employers can provide such training to the managers who are called when disputes arise.

Mental illness, including substance abuse, is another area to address (Harley et al., 2002; Rai, 2002; & Scalora et al.,2003). For example, businesses can have counselors on staff or set up Employee Assistance Programs (EAP). An EAP could discuss treatment options or give referrals for a wide variety of mental health issues. Organizations could offer mental healthcare options as part of their insurance packages. Substance abuse is also correlated with increased violence in the workplace (Flannery, 1996; & Harley et al.). Employees and supervisors could access information about symptoms of substance abuse through pamphlets or a website. The organization could

also post a list of 12-step meetings that are close to the office and held during lunch breaks. Finally, employers could require applicants to complete a personality measure to screen for severe antisocial personality traits.

Finally, workplace violence prevention efforts need to address the issue of weapons accessibility (Flannery, 1996; Harley et al., 2002; Rai, 2002, & Scalora et al., 2003). Occupations that require the use of weapons such as security officers, prison guards, and police officers, should enforce gun-handling procedures and continue training exercises. Retail stores that sell weapons should have specific security measures. For example, guns and bullets should be kept in separate locked containers and security cameras should be installed around the counter.

The potential victim is the final element for consideration when trying to reduce workplace violence. Job characteristics such as physically caring for others, denying the public a service or request, working alone, emotionally caring for others, disciplining others, handling weapons, and handling valuables, put employees at increased risk for violence (LeBlanc & Kelloway, 2002). Employers can help protect employees through training, crisis plans, security systems, and response teams (Harley et al., 2002; Wilkinson, 2001). Training can address problem identification, conflict resolution, and procedures for dealing with a hostile person (Harely et al., 2002). Schat and Kelloway (2003) surveyed 225 healthcare employees about the effects of instrumental and informational support on fear of future violence, emotional well being, somatic healthy, affect, and neglect of job duties. Participants reported that instruments support, support from managers, and support from coworkers, positively affected their emotional well being, somatic health, and affect (Schat & Kelloway). Participants also reported that informational support, such as training on how to handle threats and aggression, increased their emotional well-being. These results illustrate that training and information are beneficial to some workers.

Employers cannot prevent every instance of workplace violence. Therefore, that organizations develop crisis plans and response teams is important. Crisis plans can include procedures for self-protection and security notification. A response team "can access and manage a threatening situation, should it ever occur" (Wilkinson, 2001, p.156). The response team could include security, medical and legal personnel.

Organizations can also address the after effects of a workplace violence incident. Victims should be provided with some form of post-incident counseling by EAP

counselors or be referred to services that can help (Flannery, 1996; Harley et al., 2002; Wilikinson, 2001). Furthermore, if the violent incident had a domestic violence motive, the victim might have some special needs. For example the organization could change the victim's phone number and office location. Organizations could also provide the victim with referrals for domestic violence advocates, support groups, and shelters. Moreover, supervisors could allow the victim to take extra time off for court appearances (Wilkinson). If coworkers were aware of the situation, they would not allow the perpetrator access to work areas, break rooms, or the victim over the phone. Finally, if coworkers are aware of the situation and recognize an abusive partner, they could immediately call security.

If the perpetrator did not commit a serious assault, he or she will need some kind of intervention, especially if he or she is going to continue working for the organization. Interventions should identify stressors that led to the violent incident. Stress management techniques, problem solving, conflict resolution, and anger management could be helpful. Treatment of existing mental illnesses or substance abuse would also be appropriate.

Future Research

There is a definite need for additional research on risk factors and the effectiveness of policy interventions such as training programs, EAPs, and security measures (Douglas & Martinko, 2001; Flannery, 1996; Harley et al., 2002; LeBlanc & Kelloway, 2002; Peek-Asa et al., 2001; Schat & Kelloway, 2003). Much of the workplace violence literature is theoretical. Many articles contain conglomerations of risk factors drawn from multiple studies, general violence research, aggression research, and government resources (Flannery; Harley et al.; & Rai, 2002). In addition, some studies use samples composed of a small number of organizations, which can limit generalization of risk factors (Douglas, & Martinko). Because job characteristics contribute to assessment of an employee's risk for being a victim of violence (LeBlanc & Kelloway), sample differences matter. For example, only studying retail samples might not identify risk factors present in different occupational fields such as healthcare, transportation, construction, and so forth.

Some studies examine risk for violence from a single perspective, such as job characteristics, organizational characteristics, and perpetrator characteristics. Future research should continue to explore and identify risk factors within each category, but it should also address the

interaction of different risk factors. Specifically, investigators should examine the validity of risk models such as that developed by Neuman & Baron (1998).

Research also should address reporting issues. Accurate numbers for the occurrence of workplace would be beneficial in identifying a need for prevention and intervention, which could help increase funding for research. Death records, workers compensation records, employee reports, and government surveys are often incomplete, and therefore they may underestimate the number workplace violence incidents (Peek-Asa et al., 2001). The lack of a central reporting mechanism further hinders case identification. A central reporting mechanism would help agencies share and compare information.

Research on risk factors often uses self-report surveys to determine the frequency of occurrence of workplace violence, and the variables that were present in these violence prone organizations (Neuman & Baron, 1996; LeBlanc & Kelloway, 2002). Although authorities can distribute self-report measure to large numbers of employees, there are some problems with such methodology. First, the employees who complete surveys might not represent the workforce. For example, employees who have witnessed or experienced workplace violence might be more likely to take part in surveys than employees that have not witnessed or experienced workplace violence. Second, self-reports rely on employee perceptions of workplace violence. Employees do not necessarily agree on what constitutes workplace violence, nor do their definitions necessarily correspond with the researcher's definition. Furthermore, workers can unintentionally over report or under report the occurrence of risk factors.

To avoid some of the problems associated with self reporting techniques, Scalora et al. (2003) used police report to assess the frequencies of different types of workplace violence and possible risk factors. Police reports contain a detailed amount of information, often from multiple sources, which was collected at the time of the offense. Moreover, legal definitions of charges are consistent through the cases. A major limitation to using police reports is that they do not include those incidents that employees thought were not severe enough to warrant police intervention.

Although self-reporting methods and police reports have their limitations, they still provide valuable data. Research should continue to use both methods to identify incidents of workplace violence. Self-reporting meth-

ods could be enhanced if OSHA or the Bureau of Labor Statistics required each corporation to survey their employees annually about workplace violence issues. Moreover a standardized measure, developed by researchers, should be used to assess workplace violence issues. The survey would include items asking about the frequency of experienced and witnessed workplace violence; severity of experienced and witnessed workplace violence; perceptions of how often workplace violence went unreported; prevalence of workplace, perpetrator, and victim/job risk factors; the amount of safety training completed; security measures; and perceptions of policy intervention effectiveness.

There is considerable need to evaluate workplace violence prevention and intervention policy. Although numerous researchers recommend potential programs, there is little empirical research on the effectiveness of interventions. There is a need for longitudinal studies with control groups, which study the effectiveness of workplace violence policy (Flannery, 1996; Harley et al., 2002; Peek-Asa et al., 2001). Unfortunately, some corporations conduct evaluations of their programs, but they are not willing to share their data with the public or provide details about methodology (Peek-Asa et al.).

Peek-Asa et al., (2001) reviewed a total of 26 evaluations of environmental interventions (i.e., increase lighting, decrease amount of cash in register, employee training, etc.). Data suggest that these programs reduced robbery and related injury. However, because most of the settings were convenience or other retail stores, generalization is limited.

On the other hand, a review of behavioral and administrative approaches (e.g., conflict management, pre-placement screening, peer help programs) in healthcare settings, yielded mixed results (Peek-Asa et al., 2001). However the review exposed numerous limitations that researchers can address. First, the investigators used only nine studies because of the deficit of research in this area. Second, because the studies evaluated prevention-intervention programs in healthcare facilities, generalization is limited. Moreover, many of the studies used pre-post intervention strategies without control groups. Finally, researchers could not control changing crime rates (Peek-Asa et al., 2001).

Finally, an interesting research possibility would be to investigate the frequency of workplace violence across countries. Because aggressive and competitive norms are associated with workplace violence, comparing the frequency and severity of workplace violence in the United

States to workplace violence in countries that have collectivistic norms could reveal cross-cultural differences. Also, because stress is associated with workplace violence, examining the frequency of workplace violence in countries that average more vacation days per year compared to the United States would be interesting. Perhaps extra vacation days provide more opportunities for employees to deal with the stress of the workplace.

In conclusion, although workplace violence is not as frequent and severe as the media portrays, workplace homicide is a leading cause of death in the workplace. Also, numerous workers are assaulted on the job. Identifying workplace, perpetrator, and victim risk factors and understanding the dynamics among the variables is necessary to predict and prevent workplace violence. Finally, employers cannot prevent all workplace violence, which illustrates the need for post incident care, and research on the effectiveness of such interventions.

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Special Features

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The Special Features section provides a forum for three types of essays that should be of considerable interest to students and faculty. Students can address a variety of issues for subsequent issues of the Journal's Special Features sections. At the end of this issue (pp. 68-70), you can read about those topics. Evaluating Controversial Issues, Conducting Psychological Analyses—Dramatic, and Conducting Psychological Analyses—Current Events. In this volume, students evaluate a controversial issue and present psychological analyses of popular theatrical dramas.

Controversial Issues

Eyewitness Accuracy:

The Positive Side

Heather Monsoor

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In recent years, many studies (e.g., Fahsing, Ask, & Granhag, 2004; Shepard, 1967; Stanny & Johnson, 2000; Wells & Olson, 2003; Yarmey, 2004) have examined the credibility of eyewitness testimony. Although some sources of evidence suggest that eyewitness testimony is not always accurate, there are many situations in which eyewitness accuracy is high and that help solve criminal cases. In addition, there are specific situations in which eyewitness memory is better than in others, such as when visual images are present, and there are techniques that appear effective in maximizing such accuracy (Shepard). Instead of ruling out the use of eyewitness testimony, critics need to realize that eyewitnesses can be accurate and need to build on the variables that lead to eyewitness accuracy.

We know that memory can be extremely accurate under certain conditions. Shepard (1967) found 98% recognition accuracy for pictures and 90% accuracy for words using an immediate yes/no recognition task. Similarly, Paivio (1971) showed that visual images could aid in remembering words. He hypothesized that a dual-code exists in which images provide a second memory

code that is independent of a verbal memory code. Another condition in which memory can be accurate is under the conditions of mental imagery and associative learning. Bower (1972) asked two groups of participants to remember lists of words either by verbally associating the words with each other or by creating a visual image of the two words interacting. At the end of 20 trials, participants were tested on all 100 words to which they had been exposed. Results showed that recall was superior in the visual imagery group. Taken as a whole, these findings directly support the accuracy of eyewitness testimony because correctly recalling visual information, such as facial characteristics or a person's hair color, plays a key role in identifying suspects. In addition, there is strong evidence for the encoding specificity effect (Thomson & Tulving, 1970), which describes the finding that the more encoding and retrieval conditions match, the higher the possibility that a person will be able to correctly recall information. Thus, we know that under certain circumstances memory can be quite accurate.

Outside of controlled laboratory studies, individuals' memories about everyday events is also quite accurate. For example, Fahsing, et al. (2004) compared eyewitness descriptions to video footage of crimes. They found that a single witness typically described about 10 attributes of an offender. The most frequently and correctly described attributes included gender, age, height, and build. Although other studies have suggested that such descriptions are vague and general, knowing that specific details about a person's physical appearance can be highly accurate should be helpful in court cases.

Many variables, such as length of exposure to the crime, may enhance the accuracy of an eyewitness. Memon, Hope, and Bull (2003) specifically focused on how the length of exposure to a face is directly related to identification accuracy. A sample of 164 people was exposed to a simulated crime in which they saw the culprit's face for shorter (12 s) or longer (45 s) durations. The results indicated a clear effect of exposure duration on eyewitness identification accuracy. Longer exposure significantly boosted accuracy levels for both younger and older participants, particularly for target present line-

Richard Miller and Robert F. Rycek are editors of the *Journal's* Special Features section.

ups. Length of exposure also increased the accuracy level (correct rejections) in target absent line-ups. These findings confirm the commonsense view that extended exposure should aid subsequent recognition accuracy. Thus eyewitness accuracy can be highly accurate when the witness is exposed to the crime for a longer period of time.

Yarmey (2004) also focused on variables that promote eyewitness accuracy. He tested 590 people on their photo identification abilities, manipulating several variables, including preparation to memorize details of a target, length of interval between exposure and retrieval, retrieval instructions, gender, and absence or presence of a target in a line-up. Eyewitnesses were extremely accurate, across all variables in recalling target hairstyle and age (92% and 97% accuracy, respectively). However, eyewitnesses had lower accuracy recalling eye and hair color (21% and 52%, respectively) and for external details, such as clothing (only 8% recalled color of jewelry and 11% color of footwear). From the line-up data, Yarmey showed that participants were able to identify correctly the target, when present, with 49% accuracy, but had 62% accuracy in determining when the target was absent. Both line-ups, the target present and the target absent, were six person line-ups. Correct detection at simply a chance level would have been 16.7%. However, the participants were able to correctly identify the target with an accuracy of 49%. This evidence suggests that eyewitnesses can be very accurate when identifying physical details of an individual, rather than external elements, such as clothing or jewelry, and eyewitnesses are more accurate at determining when a target suspect is absent in a line-up than in correctly identifying a target who is present.

Wells and Olson (2003) also discussed eyewitness accuracy when correctly identifying a target in a lineup. They noted that under certain conditions mistaken identification can be very high. This findings suggests that not all eyewitness identifications are inaccurate, but only those that occur when precise conditions exist to distort accuracy. Wells and Olson suggested that many of these conditions could be avoided with the use of careful procedures for lineups. When discrediting the accuracy of an eyewitness choosing a target from a lineup, critics should consider police procedures. Eyewitnesses do not necessarily remember the target correctly, but rather the power of the situation leads them to choose the wrong target. Instead of assuming that the accuracy of the eyewitness is to blame, police officers should use more specific procedures for lineups, thus resulting in more accurate eyewitness identification.

Investigators have extensively researched one interviewing method, the cognitive interview technique developed by Geiselman, Fisher, MacKinnon, and Holland (1985). Consequently, we now know that the technique works well for witnesses retrieving specific events and information in certain situations. For example, using open-ended questions is important, to avoid suggesting new information by using a closed-ended question. Allowing witnesses to relax and put themselves mentally into the original context and situation greatly increases the amount and accuracy of information they recall. These findings are not surprising in the context of general memory studies that define situations in which memory is quite accurate, such as encoding specificity and use of multiple codes. However, the cognitive interview does not seem to be particularly effective for identifying a target in a line-up (Geiselman et al. 1985). Expert testimony often reveals information that can sway jurors not to believe eyewitness testimony even if they are highly credible.

In a further examination of the effects of eyewitness accounts on jurors, Leippe, Eisenstadt, Rauch, and Seib (2004) measured jurors' perceived accuracy of eyewitness accounts. Jurors heard expert testimony either before or after a case and its accompanying details. Leippe et al. found that jurors can over-believe or become overly skeptical of eyewitness evidence. Eyewitness testimonies can be accurate, but the use of expert testimony may sway jurors because they do not believe that the witness's testimony is valid.

Finally, Stanny and Johnson (2000) examined the literature on the weapon-focus effect, which is a finding that witnesses are often better at remembering the details of a weapon used during a criminal event, compared to their memory for the criminal. The researchers performed two additional studies, showing that witnesses magnified the weapon focus effect when the weapon was actually used. Otherwise, the mere presence of the weapon did not dilute memory for other events. Thus, eyewitness testimony can be highly accurate when the perpetrator did not use a weapon.

When drawing conclusions, critics of eyewitness testimony need to take into account the positive side. Discrediting the testimony of an eyewitness in court cases is not beneficial to the judicial system. We know that memory is accurate under certain conditions, such as when visual images are presented. In many studies citing poor eyewitness accuracy, expert testimony resulted in jurors discrediting reliable and accurate eyewitnesses. The use of eyewitnesses should not be discredited auto-

matically, but rather authorities should evaluate eyewitness testimony from all vantage points. Eyewitnesses have added many positive contributions to the judicial system.

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Failures of Eyewitness Memory

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Eyewitness testimony reflects the memory of individuals who experience an event, often very briefly and just once, and under conditions of high arousal and stress. Recently, investigators have undertaken intense scrutiny of the accuracy of eyewitness testimony with regard to identifying suspects or recalling the events of a crime scene. Many studies (e.g., Haber & Haber, 2000; Leippe, Eisenstadt, Rauch, & Seib, 2004; Tuckey & Brewer 2003; Yarmey, 2004) have shown that most of the time eyewitnesses are neither reliable nor accurate when recalling events and other information. The problem of mistaken eyewitness identification has long been known to forensic psychologists but has been emphasized in recent years by cases that highlight mistaken eyewitness identification as a major contributor to the conviction of innocent people (Weber & Brewer, 2004). Introduction of DNA testing into the judicial system has significantly advanced the legitimacy of this concern (Leippe, et al.). As of the year 2000, 52 (including 8 with death sentences) of 62 convicted and imprisoned individuals were later exonerated by DNA evidence; those cases involved mistaken eyewitness identifications (Scheck, Neufeld, & Dwyer; as cited in Leippe et al.). Furthermore, most of the general public consider eyewitness descriptions accurate, and they believe that the more confident an eyewitness is in recalling an event, the more accurate the memory. (Haber & Haber).

There are many variables that can lead witnesses to make and remember different accounts of the same event. These variables include (a) observational point of view of the witness, (b) attentiveness of the witness, (c) any special attentional focus that might reduce the breadth of a witness's observations, (d) the witness's familiarity with the event and its details, and (e) the witness's expectations about what occurred and his/her understanding of its meaning (Haber & Haber, 2000). With all of these variables influencing a person's ability to encode a memory, jurors must take such variables into consideration when listening to eyewitness accounts of an event. Prosecutors most commonly present eyewitness testimony as incriminating evidence; its effectiveness may represent an asymmetry in the comparison of prosecution and defense evidence, favoring the prosecution (Leippe et al., 2004), which can lead to the conviction of innocent persons.

In the last two decades, scientific research on memory has revealed that people's memories for witnessed events are often inaccurate. Haber and Haber (2000) concluded that most errors in eyewitness memory are systematic and reliable in that they occur under predictable conditions such as high arousal and stress. They also found that the kinds of errors are for the types of information especially important in legal cases. Such errors are made for information regarding reports of strangers performing brief, violent, or unexpected acts. These acts often frighten or emotionally upset witnesses.

Yarmey (2004) showed witnesses more readily attended to, perceived, and remembered items and persons who were more salient and central versus peripheral to the event. He suggested that eyewitness accuracy is dependent upon the processes of attention, perception, and elaboration of information. The schematic consistency of these variables influences the witnessed events. Interestingly, many eyewitnesses may not perceive the necessary information for an event at a crime scene because they were not prepared in advance to remember distinct aspects of the event. Not surprisingly in real life situations, preparation for witnessing events is not possible because a person can not anticipate that he or she will need to remember details. In the lab where participants are prepared and told to they will need to remember certain details, there is an increase in overall recall of external details. When participants were prepared, they knew they would need to remember parts of what they witnessed, which led to a better memory for external elements such as clothing.

Haber & Haber (2000) found that the probability that a single eyewitness could describe an event or a defendant with sufficient accuracy for a jury to exclude reasonable doubt and convict the defendant is rarely close to certainty and is often not very high. The investigators considered 43 variables that contribute to eyewitness memory distortion, including but not limited to observational point of view and perceptual adequacy, bias in attentional focus, witness expectations and interpretation of the event, systematic changes in the content of memory with each repetition, and encoding, remembering and identifying strangers. All of these variables can occur in the context of great confidence by the witnesses.

Tuckey and Brewer (2003) provided a detailed discussion of the process through which officials typically questioned an eyewitness. Expectations about the crime, organized in the form of a crime schema, operate to aid information processing, storage and retrieval. Officials can question a witness either on the day of the crime,

weeks or even months later. The witness can also be interviewed by many different individuals, including an investigator, and if the crime goes to trial, by both prosecution and defense attorneys. The witness may have formed a crime schema and then use that schema to help in understanding the event and in retrieval of the details of the crime.

Not only is it possible to distort memory for events, there is the possibility of implanting an entire memory for something that never happened (Manning & Loftus, 1996). An important issue for memory of schema-based crimes is the influence of schema-consistent intrusions on eyewitness reports, making it possible that any schema-consistent element reported by an eyewitness is actually an intrusion created by the strong generic representation of schema-consistent information (Tuckey & Brewer, 2003). An example of the influence of schema-consistent intrusions on eyewitness reports is an individual holding a bag and pointing it as if there were a gun inside. A witness to this event could fulfill his or her schema by assuming and reporting that the bag had a gun in it. Thus, the witness may have included details that were not at the scene but rather completed their schema.

Memory conformity is an additional issue related to schema-based inaccuracy when examining the accuracy of eyewitness memory. Gabbert, Memon, Allan, and Wright (2004) found that significant memory distortion arose when co-witnesses were allowed to discuss an event with one another before being asked for their individual memories for an event. This condition can result in what they termed "memory conformity" in which the memory report of one person becomes more similar to another person's memory report following their discussion of the event.

Leippe, et al. (2004) identified several additional variables that combine to create concern about convictions derived from false identifications. First, they provided evidence for the finding that eyewitness accounts are among the most influential forms of testimony in the courtroom. Often, eyewitness evidence is the primary evidence against a defendant. Second, they reviewed the evidence that jurors tend to over-believe eyewitnesses. This outcome may occur because jurors have insufficient understanding of the variables affecting memory and are overly swayed by eyewitness confidence. Third, eyewitness identification and memory may be highly prone to error. Some common misconceptions by people are that a person could never forget the face of a clearly seen individual who physically confronted and threatened them for more than 30 min. Leippe et al. provided evidence

from other studies that demonstrated how a large number of individuals have been unable to correctly identify their perpetrator. These data provide evidence that eyewitness memory for persons encountered during events that are personally relevant, highly stressful, and realistic in nature may be subject to substantial error. In 1978, Siegel and Loftus (as cited in Ward & Loftus, 1985) suggested that the psychological state of the witness had detrimental effects on the eyewitness's performance. More specifically, persons who were anxious and preoccupied, as measured by standardized tests, performed worse on a test measuring eyewitness accuracy.

Thus, the preponderance of evidence suggests that eyewitness testimony is often inaccurate and influenced by either conformity or misinterpretation. To avoid wrongfully accusing persons, individuals must look closer at the testimonies of eyewitnesses. With technological and biological advances, the judicial system is capable of using DNA available evidence to eliminate mistaken eyewitness identifications and convictions. Persons in the judicial system should learn and understand the evidence for inaccurate recall from eyewitnesses. Although jurors' have high confidence in eyewitness testimony, such testimony is not necessarily accurate.

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Psychological Analyses – Dramatic

Dissociative Identity Disorder: An Analysis of *The Three Faces of Eve*

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After watching the movie *The Three Faces of Eve* (Johnson, 1957), the most appropriate diagnosis for the main character, Eve White, is Dissociative Identity Disorder (DID). The basis for the movie was the true story of a woman who suffered from this disorder before it was well-known. In the movie, a psychiatrist diagnosed the character with Multiple Personality Disorder, the earlier name for DID. Throughout the movie, there seemed to be more than enough evidence to support a diagnosis of DID for the character of Eve White, according to the criteria found in the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition-Text Revision* (2000). Although DID is officially listed in the *DSM-IV-TR* as a diagnosable psychological disorder, the topic is very controversial. However, this article will not address the controversy about its validity. Instead, I assume that DID is a valid diagnosis. I will list criteria for the disorder and describe scenes in the movie that support each criterion, providing enough evidence for a definitive diagnosis.

The first criterion for DID, according to the *DSM-IV-TR* is "the presence of two or more distinct identities or personality states, each with its own relatively enduring pattern of perceiving, relating to, and thinking about the environment and self" (p. 529). The movie clearly depicted the main character experiencing multiple identities. The identity of the main character was split three ways and each identity had a different name and some very distinguishing characteristics.

Eve White was a quiet, withdrawn housewife. She was very conservative and always had her hair tied up. She never caused any problems with her husband nor would she want to. The second identity, Eve Black, was an impulsive, seductive woman. She claimed to be unmarried and said she would never marry Ralph White (Eve White's husband) even if her life depended on it. She smoked often and dressed provocatively. Her tone of voice and choice of words was often different than Eve White. Additionally, she always wore her hair down, which demonstrated that she was more free-spirited than Eve White. Eve Black liked to drink alcohol and enjoyed going out to dance. She also claimed to be allergic to nylon, even though Eve White wore hose all the time. These two identities were the only ones that were apparent initially. Toward the end of the movie, a third identity emerged. This one was sensible and intelligent but had no memory; she did not know her name, but suggested that people call her Jane. Jane was soft-spoken and very kind. The presence of these three different identities supported the first criterion for the DID diagnosis.

The second *DSM-IV-TR* criterion is: "at least two of these identities or personality states recurrently take control of the person's behavior" (p. 529). Throughout most of the movie, Eve White and Eve Black alternately take control of the behavior of the main character. The first cause of major concern occurred when Ralph, Eve's husband, came home from work to find provocative dresses and fancy shoes that had been delivered to their house in Eve's name. Eve claimed that she did not order those items; she thought Ralph had ordered them for her. When Ralph called the store, the clerk told him that Eve had indeed purchased all the dresses. But Eve claimed that she had not bought them. Shortly thereafter, Ralph heard Bonnie, their young daughter, scream, and he ran into the room and found Eve trying to strangle her. Later, Eve claimed that she had not done that. At that time, they both realized that something odd was happening to Eve.

Later in the movie, Ralph told the doctor that Eve had recently visited her sister in Atlanta and refused to return when she was supposed to return. Eve White claimed that she had not visited her sister in a very long time. When Ralph left the room to allow the doctor to analyze his wife in private, Eve White transformed into Eve Black before the doctor's eyes. She referred to Eve White as "her" and insisted that she was a different person. Eve was admitted to the state psychiatric hospital. The two identities continued to appear at different times during her stay at the hospital. She could be instructed to switch back and forth between the identities, which suggested that the disorder was somewhat controllable. Eve

was discharged from the hospital because the doctors said that she would not harm anyone. However, she was not given complete freedom. Ralph moved to Jacksonville, but Eve was not allowed to go until she recovered.

When Eve Black was the prevalent identity, she liked to go dancing. She got drunk and sang to many of the men who were also out on the town. Ralph's friends saw her out on the town. When he confronted his wife about this behavior, she claimed that she had not gone dancing because she would never do anything that scandalous. Similar instances happened time and time again, but Eve White insisted that it was not she who was acting in this rebellious manner. Ralph did not understand her behavior and was not very sympathetic. He wanted her to come to Jacksonville with him, but she did not want to go until she was well. Ralph decided to divorce Eve.

Toward the end of the movie, the third identity appeared. Eve White tried to kill herself, but Eve Black stopped her. The next day in therapy, Eve Black said that she would not let Eve White come back. However, Eve Black was concerned because she herself had been experiencing headaches followed by periods of time that she had not remembered. At that time in the movie Jane appeared under hypnotic treatment. Jane knew everything that occurred with Eve Black and Eve White, but she knew little about herself. She did not even know how long she had been around. After her appearance, Jane also developed a life of her own. She fell in love and was proposed to, but had to say no because she was "mentally sick." All of these instances of the subpersonalities being in control at different times support the *DSM-IV-TR*'s second criterion.

The third criterion for the diagnosis of DID is the "inability to recall important personal information that is too extensive to be explained by ordinary forgetfulness" (*DSM-IV-TR*, p. 529). At the beginning of the movie, Eve White told her doctor about something strange that had recently happened to her. She had been playing outside with her daughter, Bonnie, when she got a horrible headache. The next thing she knew it was the next day, and she had no recollection of what had happened since she was in the backyard the day before. She told the doctor that she had been having these amnesic spells a couple of times a week. However, after the first meeting with the doctor, she had not had additional spells for a year. After a year, the incident of the clothes-buying occurred, followed by two years of instances of unexplained behavior and actions that could not be remembered, such as the partying and multiple trips to Atlanta. These instances of forgetfulness were too extensive and common for attribu-

tion to ordinary forgetfulness. This lack of memory for certain actions continued throughout the movie. Eve White was never able to remember what happened when Eve Black or Jane took control. Similarly, toward the end of the movie, Eve Black experienced blackouts and periods of time that she did not remember. These events occurred when Jane emerged. Once again, the missing information was far too extensive and common for simple forgetting. Based on that evidence, the behavior meets the third criterion.

The fourth and final criterion for diagnosis of DID is “the disturbance is not due to the direct physiological effects of a substance (e.g., blackouts or chaotic behavior during alcohol intoxication) or a general medical condition (e.g., complex partial seizure)” (*DSM-IV-TR*, p. 529). There was no evidence in the movie to suggest that Eve White was ever intoxicated (either by drugs or alcohol) when she experienced her personality changes. Additionally, Eve had not appeared to have any kind of medical or physical condition that would cause her to forget things in such a severe manner. It seems, therefore, that the fourth and final criterion was met for a diagnosis of DID.

After reading the *DSM-IV-TR* criteria for DID and watching *The Three Faces of Eve*, I concluded that the main character’s behaviors met all the required criteria. In summary, the film did a fine job portraying a woman with DID. I believe that a professional psychologist would also diagnosis Eve with this disorder based on the evidence found in the movie.

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Fight Club:

Consumerism vs. Masculinism

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The late twentieth century was a time of great change for American men. Many men dropped their hunt-

ing rifles for Starbucks Coffee and designer hair styling products. The time was relatively peaceful, and because of our economic success, people were able to buy things they wanted instead of only the things they needed. These conditions fused to produce an average man who was perhaps less masculine and less dominant than the traditional role from years past. The term “metrosexual” entered society’s vocabulary. One of the most popular television shows, “Queer Eye for the Straight Guy,” used homosexual stereotypes to turn gruff men into fashion savvy sophisticates. Marketers observing this movement tried “to convince men that they needed to cram their cabinets with as many expensive balms, masks, and scrubs as women stockpile” (Barker, 2004).

In *Fight Club* (Fincher, Linson, Chaffin, & Bell, 1999), an everyday office worker named Jack created an alter ego who masterminded Project Mayhem, a plan to destroy American consumerism, an attachment to materialistic values or possessions, in hopes of advancing masculinism, which embraced the characteristics that make men different from women. The conflict between his two personalities represented the internal conflict of many men to conform to the new wave of consumerism versus retaining aspects of traditional men. This article examines how men losing their traditional roles in society psychologically damaged Jack.

Social Roles Theory

Fight Club proposed that men are entering depressed states because they have become part of the American commercial machine that is changing the roles of men. These changing roles are called norms, which are expectations applied to men in the dynamics of a normal family. The first of these norms is the physical toughness norm (Burn, 1996), which is the expectation that a man be physically strong. This norm has partly diminished because of industrialization. Because women can operate machinery just as easily as men, this expectation for men has decreased.

Masculinism favors physical strength because that is the tradition. Historically, humans relied on men to be hunters, which required strength. Consumerism is an enemy of this ideal because most of our food lives its entire life inside fences, waiting to be processed. Another norm threatened by consumerism is the success/status norm. According to Burn (1996), the success/status norm is the belief that “a man’s success, and ultimately his masculinity, is based on how well he provides for his family’s material needs and wants” (p. 89). Basically this norm identifies the male role of provider. As more and

more women entered the work force, women could be providers of equal or even greater strength than men. Burn also highlighted the emotional toughness norm, characterized by an expectation of stoicism for men. Masculinists cite a need for this trait in men because conflict resolution often required logic, not emotion. Antifemininity in which “men ... avoid stereotypically female activities, behaviors, and occupations” (p. 99) was another norm Burn proposed. Masculinists believe that if men are emotionally and physically strong, they will not have the capacity for depression or the desire to be feminine. The men of Project Mayhem had ambitions to uphold these norms.

In addition to Social Norms Theory there is Social Roles Theory. According to Social Roles Theory, social roles lead to social stereotypes that dictate what men and women think of other men and women in their environments (Burn, 1996). For example, when we see men and women performing different tasks, we assume that they are correspondingly different (i.e. women in masculine roles are thought to be more masculine in personality than women in feminine roles and the same principal is true for men performing a traditionally female job). Thus, men placed in a female role must reclaim their masculinity. Jack, the main character of *Fight Club*, had a modern, run-of-the-mill office job in which no stereotypical male traits (physical aggression, strength, and stoicism) were needed to perform tasks. This lack of masculinity in Jack’s life (the disregard of social norms and roles) created unrest, which led to Jack’s insomnia, depression, and even dissociative identity disorder.

Dissociative Identity Disorder (DID)

According to the American Psychiatric Association’s *Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition-Text Revision* (2000), DID, previously referred to as multiple personality disorder, is “the presence of two or more distinct identities or personality states that recurrently take control of behavior” (p. 529). McHugh (1999) stated that DID is “promoted by suggestion, social consequences, and group loyalties. It rests on ideas about the self that obscure reality” (paragraph 8). When Jack created his alter ego, Tyler Durden, he created someone quite different from himself. Tyler was a man’s man who enjoyed fighting, copulating, and mischief, all of which did not exist in Jack’s life before Tyler entered. Tyler obscured the reality from Jack that he was not masculine. Jack believed he should be more like Tyler but could not find a way because he did not know he was Tyler. Jack’s desire to be like Tyler, that is to be more masculine, was a sign of a man suffering identity prob-

lems because of somewhat feminine environment. Another personality disorder that may have led to DID in Jack was a castration complex.

Castration Complex

A castration complex is “a child’s fear or delusion of genital injury at the hands of the parent of the same sex as punishment for unconscious guilt over oedipal strivings; broadly: the often unconscious fear or feeling of bodily injury or loss of power at the hands of authority” (Pease, 2002). The motif of castration was interjected throughout *Fight Club*. For example, before Jack creates Tyler, he went to a testicular cancer survivor support group for men who have been castrated as a result of the disease. When the members of Project Mayhem coerced the police investigator to tell the media that Project Mayhem did not exist, and when a member threatened to leave Project Mayhem, castration was threatened. This technique showed the threatened individual the value of the male genitalia. These two instances of castration represent the two types of castration victim pain. The first was physical pain that would be experienced by the police investigator; the second was the permanent emotional pain of the cancer survivor.

Another example of castration complex took place in a conversation between Jack and his alter ego (Tyler) after an explosion destroyed all of Jack’s material possessions. When reflecting on this event, Jack said,

when you buy furniture you tell yourself ‘That’s the last sofa I’m gonna need. Whatever else happens, I’ve got that sofa problem handled.’ I had it all. I had a stereo that was very decent, a wardrobe that was getting very respectable. I was close to being complete and now it’s gone; all gone.” (Fincher, et al., 1999).

To these thoughts, Tyler simply responded with “It could be worse; a woman could cut off your penis while you’re sleeping and toss it out the window of a moving car.” The conflict between Jack (consumerism) and Tyler (masculinism) was most prevalent in that scene. Although Jack thought his whole life, which completed him, was destroyed, Tyler thought that he was more complete because the loss marked a return to the “essentials of our survival in the traditional hunter/gatherer sense.” The destruction of consumerism in Jack’s life led to the foundation of masculinism. The threat of castration served as a poignant reminder of what was important to being a man in a basic sense of the word. Tyler had an intense castration complex and Project Mayhem, which

he started, could have been the result of that fear. Tyler was afraid of authority becoming too powerful, and he viewed this threat as potentially damaging to masculinity.

Discussion

Fight Club is a movie trying to show the helplessness of the American man. Tyler Durden said of himself and his fellow working men that they were “the middlemen of history. [They] have no purpose, no place. [They] have no great war, no great depression. [Their] great war is a spiritual war; [their] great depression is [their] lives.”

Many men in this country think that they could be a celebrity, but in reality, the dream is most likely a fantasy. Masculinism wants men to think that there is more to life than being adorned on television and magazine covers. What makes a man is not his financial portfolio or how nice his dining set is. A successful man should be defined as someone who has a strong sense of humbleness, cares about his health, and takes care of his family out of love. If that is the goal of men, scenarios like *Fight Club*, in which men violently revolt against consumerism, can be avoided. Consumerism may take the American man some getting used to, but if it is viewed as an adjustment instead of a threat, then the American man can retain that which makes him masculine.

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Invitation to Contribute to the Special Features Section—I

Undergraduate students are invited to work in pairs and contribute to the Special Features section of the next issues of the *Journal of Psychological Inquiry*. The topic is:

Evaluating Controversial Issues

This topic gives two students an opportunity to work together on different facets of the same issue. Select a controversial issue relevant to an area of psychology (e.g., Does violence on television have harmful effects on children?—developmental psychology; Is homosexuality incompatible with the military?—human sexuality; Are repressed memories real?—cognitive psychology). Each student should take one side of the issue and address current empirical research. Each manuscript should make a persuasive case for one side of the argument.

Submit 3-5 page manuscripts. If accepted, the manuscripts will be published in tandem in the Journal.

Note to Faculty:

This task would work especially well in courses that instructors have students debate controversial issues. Faculty are in an ideal position to identify quality manuscripts on each side of the issue and to encourage students about submitting their manuscripts.

Procedures:

1. All manuscripts should be formatted in accordance with the APA manual (latest edition).
2. Provide the following information:
 - (a) Names, current addresses, and phone numbers of all authors. Specify what address and e-mail should be used in correspondence about your submission,
 - (b) Name and address of your school,
 - (c) Name, phone number, address, and e-mail of your faculty sponsor, and
 - (d) Permanent address and phone number (if different from the current one) of the primary author.
3. Include a self-addressed stamped envelope of proper size and with sufficient postage to return all materials.
4. Send three (3) copies of the a 3-5 page manuscript in near letter quality condition using 12 point font.
5. Include a sponsoring statement from a faculty supervisor. (Supervisor: Read and critique papers on content, method, APA style, grammar, and overall presentation.) The sponsoring statement should indicate that the supervisor has read and critiqued the manuscript and that writing of the essay represents primarily the work of the undergraduate student.

Send submissions to:

Dr. Richard L. Miller
Department of Psychology
University of Nebraska at Kearney
Kearney, NE 68849

Invitation to Contribute to the Special Features Section—II

Undergraduate students are invited to contribute to the Special Features section of the next issue of the *Journal of Psychological Inquiry*. The topic is:

Conducting Psychological Analyses – Dramatic

Submit a 3-5 page manuscript that contains a psychological analysis of a television program or movie. The Special Features section of the current issue (pp. 50-58) contains several examples of the types of psychological analysis students may submit.

Option 1—Television Program:

Select an episode from a popular, 30-60 min television program, describe the salient behaviors, activities, and/or interactions, and interpret that scene using psychological concepts and principles. The presentation should identify the title of the program and the name of the television network. Describe the episode and paraphrase the dialogue. Finally, interpret behavior using appropriate concepts and/or principles that refer to the research literature. Citing references is optional.

Option 2—Movie Analysis:

Analyze a feature film, available at a local video store, for its psychological content. Discuss the major themes but try to concentrate on applying some of the more obscure psychological terms, theories, or concepts. For example, the film *Guess Who's Coming to Dinner?* deals with prejudice and stereotypes, but less obviously, there is material related to attribution theory, person perception, attitude change, impression formation, and nonverbal communication. Briefly describe the plot and then select key scenes that illustrate one or more psychological principles. Describe how the principle is illustrated in the movie and provide a critical analysis of the illustration that refers to the research literature. Citing references is optional.

Procedures:

1. All manuscripts should be formatted in accordance with the APA manual (latest edition).
2. Provide the following information:
 - (a) Names, current addresses, and phone numbers of all authors. Specify what address and e-mail should be used in correspondence about your submission,
 - (b) Name and address of your school,
 - (c) Name, phone number, address, and e-mail of your faculty sponsor, and
 - (d) Permanent address and phone number (if different from the current one) of the primary author.
3. Include a self-addressed stamped envelope of proper size and with sufficient postage to return all materials.
4. Send three (3) copies of the a 3-5 page manuscript in near letter quality condition using 12 point font.
5. Include a sponsoring statement from a faculty supervisor. (Supervisor: Read and critique papers on content, method, APA style, grammar, and overall presentation.) The sponsoring statement should indicate that the supervisor has read and critiqued the manuscript and that writing of the essay represents primarily the work of the undergraduate student.

Send submissions to:

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