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Contents

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Nebraska Psychological Society

Association for Psychological and Education Research in Kansas

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

I am delighted to welcome you to the first issues of a new refereed psychology journal. What is unusual is that this journal is one of a few that accepts contributions from only undergraduate students. Why does this journal exist? What are the attitudes of the reviewers and editors? How often can you expect the journal to be published? Who has contributed to the development of the journal? When did the idea for this journal begin and where? In this editorial, I will answer those questions.

The journal exists for a variety of reasons, and a primary one is to illustrate the high quality of undergraduates' scholarly work. Scholarly work encompasses a broad range of investigation and includes more traditional data-based activity, as well as literature reviews and historical research. Transmitting the results of one's scholarship through a printed medium requires development of formal, written communication skills. Promoting the refinement of such skills is another goal for the journal. According to employers, and professional and graduate school faculty, increasing undergraduates' written communication skills would make those students more attractive for employment and for admission to post graduate training or education. Increasing students' success in life following graduation is another aspiration associated with the journal. Because modeling can facilitate learning, showing students what their peers have accomplished should help to encourage ever widening circles of students to become engaged in and excited about research.

In many meetings and discussion with faculty, I have found ample evidence to conclude that there is a strong commitment to promote writing and scholarship among undergraduate students. Furthermore, these same faculty believe that the use of constructive and informed feedback is the most effective way to improve communication skills. Personal or degrading criticism of students' work is not an acceptable ethic among the journal's reviewers and editorial staff. If you submit a manuscript, you can expect to receive thorough and encouraging support for your effort. Moreover, editors frequently encourage revision and resubmission of manuscripts that they do not accept.

The editorial staff decided to start by publishing only one issue during the first year. After determining the requirements for producing a high quality journal, we can evaluate the feasibility of increasing the frequency of publication. The frequency of publication also depends on the number of manuscripts students submit. Finally, as more faculty supervisors mentor their students' research, we expect that the need for additional issues will increase.

Contributions to the journal have come from many individuals. Betty Dahl's dedication to encouraging and supporting undergraduate research provided inspiration for the journal. Members of the editorial staff have given unselfishly of their skills, time, and energy. Reviewers have offered their expertise and perspectives. Of course, without the students and their sponsors' commitment to scholarship, the journal could not exist. Financial support for the journal has come from contributions by numerous organizations, and colleges and universities in Nebraska, Kansas, Missouri, and Oklahoma. Faculty members from those institutions have also made contributions to offset the journal's startup costs. Eventually, I hope that subscriptions and purchases of back issues of the journal will support production costs. The creation of a nonprofit, tax-exempt corporation will provide a mechanism for soliciting financial support for the journal and, in the long run, for helping defray costs for the Great Plains Students' Research Convention.

Identifying the date and circumstances for starting this journal is a difficult task. What Ebbinghaus said about the origins of psychology might apply to the origins of the journal … it has a long past but only a very short history. I can say with confidence that a more extensive discussion about starting this journal occurred at The Fourteenth Annual Great Plains Students' Psychology Convention held in Kansas City, MO on February 18 and 19, 1994. So enthusiastic was the response to the proposal for a journal that one faculty member said that we should produce the journal by the end of that year! In retrospect, such a deadline was overly optimistic. The editorial staff met during June of 1994 and 1995 to discuss policy and practice issues. Almost two dozen faculty members and graduate students have participated in one of three reviewer workshops designed to establish a standard for the quality of publishable research. Almost three dozen faculty members and graduate students have worked as reviewers to produce the journal. Two years after that meeting in Kansas City, the journal's first issue appears, but I think that the preparation was worth the wait.

Mark E. Ware
Managing Editor

Instruction for Contributors

The *Journal* 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, or the Nebraska Psychological Society.

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 four (4) manuscripts in near letter quality condition using 12 point font. Faded or poor quality printing may be grounds for returning materials without review.

7. Insert a self-addressed, stamped postcard. On the reverse side of the card, write the name of the primary author and the title of the manuscript.

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).

9. Include a self-addressed stamped envelope of proper size and with sufficient postage to return all materials.

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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.

Send submissions to:

Mark E. Ware, Managing Editor
Journal of Psychological Inquiry
Department of Psychology
Creighton University
Omaha, NE 68178

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Perceived Attractiveness of Men Who Cry

Anne Verbeck

Nebraska Wesleyan University

The attractiveness to women of men who express sensitivity by crying was studied using 60 female college students who watched one of three videotapes of a young adult man. In one videotape, a man cried when talking about a sad event that happened to someone else (i.e., illustrating empathy); in the second, he cried when discussing a disappointing event in his own life; and in the third, he did not cry at all. Results indicated significant differences for 3 of the 19 items on the questionnaire. Differences were found in ratings of sympathy, irritability, and similarity. These findings, along with trends in the data, indicated that there is more acceptance than hypothesized among women for men who cry. However, the results were not consistent enough to generalize about the effect men's crying has on their perceived attractiveness to women. Several suggestions for additional research are described

Stereotypes of emotionality exist in our society. Women rather than men usually find greater acceptance when displaying sad behaviors, for example crying (Hoover-Dempsey, Plas, & Wallston, 1986). Because men find less acceptance for expressing emotions through crying, stereotypes may influence the amount of interpersonal attraction women have for men who cry. Research reveals gender differences in crying. Ross and Mirowsky (1984) found that men cry less often than women and that the correlation between crying and sadness is much lower for men. Men who adhere to traditional sex roles are not likely to cry when they are sad, whereas men who are nontraditional in their beliefs are likely to do so (Ross and Mirowsky, 1984). Compared to men, women report greater intensity, frequency, and likelihood of crying across several interpersonal situations (Lombardo, Cretser, Lombardo, & Mathis, 1983). Although these studies indicate a gender difference in the expression of sadness, they do not indicate a difference in the actual experience of sadness.

Socialization is one explanation for perceived differences in the expression of emotion. We learn how to express our emotions from the day we are born. We watch significant others and learn appropriate norms for behavior. During face-to-face play as infants, we learn display rules from modeling the expressions we see from our mothers. Malatesta and Haviland (1982) found that infants as young as three months could display several different emotional expressions, including sadness. Also, both male and female infants showed the same frequency of sadness. At this young age, girls were not expressing sadness more often than boys. However, by the time children reached high school, there were gender differences in emotional expression (Eisler & Blalock, 1991). Other research has shown that the perceived expression of sadness is related to the age of the subject. The perceived expression of sadness in boys decreases with age as they learn to inhibit the expression of sadness. Fabes and Martin (1991) found that the frequencies with which male and female targets were perceived to express sadness were comparable until adolescence and adulthood. During these two stages of life, boys and men were perceived to express sadness significantly less often. When preschoolers were asked to attribute the expression of emotions to gender, sadness was not perceived to be associated more with one gender than the other (Birnbaum & Chemelski, 1984). From these studies, one can conclude that the perceptions people develop about the gender-appropriateness of emotional expression, specifically sadness, could develop from socialization.

Expressing emotion through crying does not only mean that an individual is sad for personal reasons. People may also express emotion because they empathize with someone else. Research involving sex differences in empathy has had mixed results, depending on the measure of empathic expression. Examination of self-reports of empathic reactions suggests a difference, with women having stronger reactions than men. However, few gender differences have been found in the experience of empathy when looking at physiological or facial measures. Eisenberg and Lennon (1983) explained that these differences may be because of how empathic men and women would like to appear. Because most people view expressions of emotionality and nurturance as feminine traits, there is a greater likelihood that women versus men would present themselves as empathic, even though there may be no gender differences in responsiveness

Kenneth D. Keith from Nebraska Wesleyan University was the faculty sponsor for this research project. Elizabeth Self offered advice during the study's planning phase.

(Eisenberg & Lennon, 1983). The stereotype that women are more empathetic than men may be largely because of sex roles that govern the behavior of women and men.

How does this display norm for crying affect attractiveness? If a man exhibits gender-appropriate behavior (i.e., inhibits the expression of sadness), women should perceive him as more attractive because he is conforming to an appropriate standard of behavior. However, women also value expressiveness and sensitivity. These values may transfer across gender lines, making a man who displays emotion more, rather than less, attractive. When women were asked to rate adjectives on a dimension emphasizing goodness, they gave higher ratings to adjectives that reflect a caring perspective (Stimpson, Neff, & Jensen, 1991). Descriptors included tender, sensitive, eager to soothe hurt feelings, sympathetic, and compassionate—all relating to the expression of emotion. If a man expressed his sad feelings, such behavior could reflect his sensitive or compassionate nature, and a woman might find him attractive. A man who shows empathy for another person could also be seen as more attractive because empathy is primarily concerned with experiencing another person's feelings; thus, empathy requires compassion and sensitivity.

Although the research described above implies that women should be attracted to men who express their emotions, other social norms may be overpowering. Zillmann, Weaver, Mundorf, and Aust (1986) discovered that female subjects least enjoyed watching a horror movie in the company of a male confederate who expressed distress. There was also a relationship between the physical appeal of men and their display of mastery or distress. For example, men who were not considered physically attractive benefited from showing fearlessness in a terrifying situation (Zillmann et al., 1986). Thus, attraction seemed related to the traditional social norms for gender. Traditionally, men have been seen as "macho" in a dangerous or terrifying situation; therefore, when they break this norm and reveal their true feelings, they take the risk of being rejected.

The present investigation studied the relationship between attraction and the men's expression of sadness by crying. I hypothesized that women would not be as attracted to men who cried as they would to men who did not overtly express emotion. However, attractiveness may vary because of the reason for the sadness. Because it indicates sensitivity and compassion, women should be more attracted to men who cry to show empathy for another person than to men who cry because of something that happened to themselves. Thus, although overall preference might be for a man who does not express sadness at all, a man who expresses sadness as a demonstration of empathy should be seen as more attractive than one who is sad because of events in his own life.

Method

Participants

Participants consisted of 60 female undergraduate students from a small midwestern liberal arts institution. All but one subject were traditional college-age students between 18-22 years old. They were recruited from psychology courses, and some of them received extra credit for their participation.

Procedure

Before beginning the experiment, participants were randomly assigned to one of three conditions, with 21 women in condition one; 19 in condition two; and 20 in condition three. A brief explanation of the study was provided and written informed consent was obtained. Participants were told that they would be watching a 13 min videotape about a man and afterwards would be asked to fill out a questionnaire.

The videotape depicted a male confederate responding on camera to questions about him . A woman, who was off camera, asked the man questions in the setting of his own home. The man was a 21-year-old college student who had acting experience. In all three conditions, the confederate answered the same questions with the same answers. First, he was asked his name and to tell a little about himself. The second question asked him to tell about his closest friends and if anything had happened that made him feel differently about friendship. The third question asked whether he was involved in a dating relationship and what qualities he looked for in a dating partner. The fourth question asked him to talk about a disappointing event in his life, and the fifth asked him to explain what he saw himself doing 5-10 years in the future and if that event were consistent with what he had wanted to do when he was younger.

The independent variable was crying. In condition one, the man cried when he answered the second question by describing how a friend of his had lost a close friend in an accident that he observed. Thus, condition one illustrated crying associated with empathy. In condition two, the man cried when talking about a disappointing event that happened to him—crying associated with personal disappointment. In condition three, the man did not

cry at all. In all conditions, the script—and hence, the verbal content of the actor's answers—was the same. After the videotape was shown, participants completed a questionnaire by responding to what they had seen on the videotape. Because there were some items on the questionnaire that concerned dating the man, participants were asked to fill out the questionnaire as if they were not presently involved in a dating relationship.

The questionnaire consisted of 19 items, and all but one of them were taken from instruments used in earlier attraction research (Zillmann et al., 1986). Fourteen items were traits that described the male confederate. The items were: sensitive, likable, sympathetic, sincere, shallow, irritating, dependable, generous, considerate, conceited, humorous, exciting, perceptive, and physically attractive. Participants were also asked to rate how much they would like to date the man, felt similar to him, would like to work with him, would get along with him, and would like to get to know him better. Each item was in the form of a statement, and participants expressed the extent of their agreement by using a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Finally, participants were asked to write on the bottom of the questionnaire whether they knew the man in the videotape. One participant was excluded from analysis because she knew the confederate. The study used a random groups design with three levels of the independent variable, crying.

Results

A one-way randomized analysis of variance (ANOVA) was performed for each item on the questionnaire to assess the attractiveness of the male confederate. An alpha level of .05 was used for all statistical tests. Significant differences were found for the traits of sympathetic, $F(2, 58) = 5.94$, $p < .05$; irritating, $F(2, 58) = 4.09$, $p < .05$; and the extent to which participants felt similar to the confederate, $F(2, 58) = 6.84$, $p < .05$. Scheffé's multiple comparison test for unequal sample sizes was used for post hoc analyses. The male actor who

Table 1
Mean Ratings And Standard Deviations Of Perceived Attractiveness

Attractiveness Trait	No Cry		Cry For Self		Cry - Empathy	
Dimensions	M	SD	M	SD	M	SD
Sensitive	5.71	1.45	6.17	0.71	6.30	0.66
Likable	5.91	0.94	5.78	0.81	6.15	0.67
Sympathetic	5.19*	1.29	5.89	0.58	6.15*	0.67
Sincere	5.86	0.96	6.22	0.55	5.85	1.04
Shallow	2.00	0.89	2.00	0.91	2.15	0.99
Irritating	1.95	0.80	1.89*	0.83	2.70*	1.26
Dependable	4.48	1.21	4.72	0.96	4.45	1.10
Generous	4.52	0.93	5.22	1.00	4.95	0.89
Considerate	5.24	0.77	5.67	1.24	5.45	1.00
Conceited	2.43	1.57	2.22	1.35	2.60	1.19
Humorous	5.43	1.03	5.50	0.79	5.05	1.23
Exciting	4.81	0.98	5.33	1.08	4.80	1.58
Perceptive	5.10	0.89	5.06	0.94	5.25	1.21
Physically Attractive	4.29	1.76	4.28	1.36	4.55	1.61
Like to Date	3.10	1.92	4.00	1.64	4.10	1.74
Similar To	2.33*	1.35	3.83*	1.86	4.20*	1.58
Like to Work With	4.71	1.85	5.11	1.37	5.75	1.02
Get Along With	5.91	0.77	5.00	1.11	6.10	0.64
Get to Know Better	5.05	1.12	5.28	1.23	5.55	1.19

Note. Participants gave attractiveness ratings using a 7-point scale from 1 (*strongly disagree*) to 4 (*neutral*) to 7 (*strongly agree*).
* $p < .05$

cried to express empathy elicited significantly higher ratings on the sympathetic item than when he did not cry at all, $F = 6.35$. Participants who saw the confederate cry to show empathy gave significantly higher ratings on the irritating item than those who saw him cry for personal disappointment, $F = 6.35$. Participants in both conditions in which the man cried gave significantly higher ratings on the "similar to him" item than those who did not see him cry, $F = 8.36$ and $F = 11.57$.

Although there were no significant differences among conditions for the other items, there was one interesting pattern among the means. Inspection of Table 1 reveals that mean ratings for the items of sensitivity, liking to date him, liking to work with him, and getting to know him better were highest for those in condition one (empathy) and lowest for those in condition three (no crying).

Discussion

In this study, I hypothesized that there would be more attraction to the male confederate when participants did not see the confederate cry versus the two crying conditions. For the two crying conditions alone, I hypothesized that female participants would find the male confederate more attractive in the empathy condition. The results from this experiment did not support my first prediction; however, there was marginal support for the second hypothesis. Previous research (Stimpson, et al., 1991) has shown that women prefer a caring morality in men, and the videotape showing the male crying because of empathy evoked responses consistent with this research. Data in this study may also indicate that under certain conditions men, who show empathy, are more attractive.

Another explanation for significant differences on the sympathy item is confusion between the definitions of empathy and sympathy. Wispe (1986) showed that there has not been a clear distinction between the two concepts; that is, many people think they are the same. Participants in this study may have interpreted the man's crying as an expression of sympathy instead of empathy.

The second significant finding in this study was that female participants who saw the man cry to express empathy gave him higher ratings on the irritating item than those who saw him cry in response to a personal disappointment. On the surface, this finding appears to contradict other findings from this study, however, closer inspection of the data suggests other interpretations. For example, there may have been confusion in the definition of irritating. Irritating may have been an ambiguous term and may have influenced participants' interpretations of other characteristics. Reference to the mean scores shows that when the man cried for himself he was seen as more sincere than when he cried to show empathy. Although this difference in rating sincerity was not statistically significant, it may have contributed to the difference found on the irritating item. In other words, participants may have found the man more irritating because of a lack of sincerity they felt he showed, rather than the nature of his crying. There is also the possibility that the participants have had more exposure to men who cry for themselves, instead of others, whether through personal experiences or media exposure. If this were the case, the women may have perceived the man who expressed empathy as contradicting social norms even more than the other crying condition and, therefore, more irritating to them. Another explanation is that the confederate may have seemed more vulnerable when he cried because of the disappointing event than because of the friend's loss. Rainville and Gallagher (1990) found that vulnerability enhanced attractiveness and date desirability for men and women. Crying while self-disclosing may have made the male confederate appear more vulnerable, thus enhancing his attractiveness and diminishing his appearance as irritating.

Participants' ratings of their own similarity to the man have interesting implications. Greater perceived similarity between participants and the male actor in conditions where crying occurred could indicate that men who cry are more attractive than those who do not. Previous research has shown a relationship between attraction and similarity (Byrne, 1961; Byrne & Nelson, 1965; Neimeyer & Mitchell, 1988; Gonzales, Davis, Loney, LuKens, & Junghans, 1983). Specifically, the more similar a person feels to another, the more attraction they will feel toward that person. Applying that principle to this research, women would be expected to like men who cry to express emotion more than those who do not cry at all. However, this interpretation is not clear-cut because socialization may make crying more acceptable for women than men. Therefore, a man who expresses emotions by crying would be going against norms, and on that basis might be seen as less attractive. Two contradictory principles are present: one that predicts decreased attractiveness because of the violation of traditional gender norms and one that predicts increased attractiveness because of a similarity principle. Data from this study do not allow a clear conclusion that a man who cries is more attractive than one who does not, but by implication the data are consistent with a view about the relationship between attraction and similarity.

Other findings, though not statistically significant, were of interest. There was, for instance, a tendency for the man in the crying conditions to be higher on the likable items than in the no crying condition—a trend consistent with the idea that there is more acceptance among women for men who cry. Other research has shown that younger women are more acceptable of men who cry (Vanier & Hardison, 1978; Crester, Lombardo, Lombardo, & Mathis, 1982). Stereotypical male roles may be weakening in our society, but confirmation of that view requires more research.

This study does have implications for further research. The main effects and general direction of the means suggest more attraction for the male actor in the conditions in which he cried. The process of socialization for appropriate gender role behaviors concerning the expression of emotion may not be as strong for the present generation of women as for previous ones. An investigation of generational differences would be interesting. There may be greater acceptance for men who cry in subsequent generations as the socialization process changes. Another interesting study would be to investigate the acceptance men have for other men who cry. Findings from such a study could reveal whether stereotypes about men who cry are changing for both men and women.

Another aspect that future research could examine is whether women endorse their feelings when given the opportunity. For example, would women list the expression of feelings as one quality they looked for in men but when observing that behavior, still find it unattractive? Expressing emotion through crying could be one such quality to examine. One could also investigate the relationship between physical attractiveness and crying. Although previous research has suggested a relationship between physical attractiveness and the expression of emotional distress (Zillmann et al., 1986), crying as a specific emotional expression has not been examined in relation to physical attractiveness.

Overall this research did not find consistent differences in characteristics measuring perceived attractiveness of men who express emotion by crying and those who did not. The significant findings that did occur were more indicative of increased attraction for men who cried versus my initial hypothesis favoring men who did not cry. Thus, crying in men may not have the effect as I hypothesized. The social sanctions against crying in men may also be diminishing, with crying becoming a more acceptable behavior for men. Further research should be done to obtain a clearer perspective about this issue.

References

Birnbaum, D. W., & Chemelski, B. E. (1984). Preschoolers' inferences about gender and emotion: The mediation of emotionality stereotypes. *Sex Roles, 10,* 505-511.

Byrne, D. (1961). Interpersonal attraction and attitude similarity. *Journal of Abnormal and Social Psychology, 62,* 713-715.

Byrne, D., & Nelson, D. (1965). Attraction as a linear function of proportion of positive reinforcements. *Journal of Personality and Social Psychology, 1,* 659-663.

Cretser, G. A., Lombardo, W. K., Lombardo, B., & Mathis, S. (1982). Reactions to men and women who cry: A study of sex differences in perceived societal attitudes versus personal attitudes. *Perceptual and Motor Skills, 55,* 479-486.

Eisenberg, N., & Lennon, R. (1983). Sex differences in empathy and related capacities. *Psychological Bulletin, 94,* 100-131.

Eisler, R. M., & Blalock, J. A. (1991). Masculine gender role stress: Implications for the assessment of men. *Clinical Psychological Review, 11,* 45-60.

Fabes, R. A., & Martin, C. L. (1991). Gender and age stereotypes of emotionality. *Personality and Social Psychology Bulletin, 17,* 532-540.

Gonzales, M. H., Davis, J. M., Loney, G. L., LuKens, C. K., & Junghans, C. M. (1983). Interactional approach to interpersonal attraction. *Journal of Personality and Social Psychology, 44,* 1192-1197.

Hoover-Dempsey, K. V., Plas, J. M., & Wallston, B. S. (1986). Tears and weeping among professional women: In search of new understanding. *Psychology of Women Quarterly, 10,* 19-34.

Lombardo, W. K., Cretser, G. A., Lombardo, B., & Mathis, S. L. (1983). Fer cryin' out loud—there is a sex difference. *Sex Roles, 9,* 987-995.

Malatesta, C. Z., & Haviland, J. M. (1982). Learning display rules: The socialization of emotion expression in infancy. *Child Development, 53,* 991-1003.

Neimeyer, R. A., & Mitchell, K. A. (1988). Similarity and attraction: A longitudinal study. *Journal of Social and Personal Relationships, 5,* 131-148.

Rainville, R. E., & Gallagher, J. G. (1990). Vulnerability and heterosexual attraction. *Sex Roles, 23,* 25-31.

Ross, C. E., & Mirowsky, J. (1984). Men who cry. *Social Psychology Quarterly, 47,* 138-146.

Stimpson, D., Neff, W., & Jensen, L. C. (1991). The caring morality and gender differences. *Psychological Reports, 69,* 407-414.

Vanier, D. J., & Hardison, N. M. (1978). Age as a determinant of sex-role stereotyping. *Psychological Reports, 42*, 35-38.

Wispe, L. (1986). The distinction between sympathy and empathy: To call forth a concept, a word is needed. *Journal of Personality and Social Psychology, 50*, 314-321.

Zillmann, D., Weaver, J. B., Mundorf, N., & Aust, C. F. (1986). Effects of an opposite-gender companion's affect to horror on distress, delight, and attraction. *Journal of Personality and Social Psychology, 51*, 586-594.

Random-Digit Generation Effects on Visual-Spatial Working Memory Spans of Younger and Older Adults

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A less understood role of the central executive concerns the overseeing of its slave systems, (i.e., the articulatory loop and the visuo-spatial sketch pad). One task shown to require central executive involvement is random-digit generation. Participants were asked to randomize digit order or remain silent during a primary spatial-location span task. Results revealed that the older group tended to do as well as the younger group with minimal memory load and better *than the younger with increased memory load. Interpretation of results considered central executive involvement in visual-spatial processing as well as age and inhibitory function. Future research may need to examine the role of additional tasks to account successfully for visuo-spatial sketch pad functioning in age-related investigations.*

The model of working memory (WM), originally proposed by Baddeley and Hitch (1974), assumed three components: a central executive, an articulatory loop, and a visuo-spatial sketch pad. Together these components were considered responsible for the temporary storage, processing, and manipulation of cognitive information. The central executive was assumed to be a central controller for two subsidiary slave systems, as well as to have a primary role in cognitive processes that require reading comprehension, problem solving, and attentional allocation (Baddeley, 1992). The role of the articulatory loop was to maintain phonologically based information through a type of subvocal rehearsal mechanism. Lastly, the function of the visuo-spatial sketch pad was to manipulate and store information visually and spatially through the use of imagery processes. Research results using a dual task paradigm have supported separating the latter two sub-systems (Baddeley, 1992).

For example, Logie and Baddeley (1987) hypothesized that by loading the articulatory loop with a secondary task, such as concurrent articulation, performance on a primary task would decrease (i.e., primary task performance should decrease if the task required utilizing the articulatory loop). In their design, the primary task required participants to count the number of times a square appeared on a computer screen. They varied the type of secondary task that participants had to perform while simultaneously counting squares. Participants either repeatedly said the word *the,* rapidly tapped their finger when the square appeared, or did nothing, (i.e., a control condition in which subjects just counted the squares). The investigators found participants made significantly more errors in recalling the number of squares that appeared while saying the word, *the,* which required articulation, than participants who tapped their finger or did nothing.

Also using a dual task paradigm, Turner and Gilpin-McMinn (1993) hypothesized that visual-spatial WM spans would decrease during visual-spatial but not articulatory interference, when measured in a spatial location span task. In their primary span task, participants were asked to remember the cell locations of randomly presented triangles in sets of 5 x 5 matrices. Simultaneously, participants either repeatedly said the word, *the,* thought to be a function of the articulatory loop, or detected a red bar randomly appearing outside the stimulus matrix believed to require resources of the visual-spatial component of WM. They found the total number of correctly identified cell locations—visual-spatial span scores—were lower when subjects had to detect the red bar than when they had to say the word, *the,* repeatedly which supported their hypothesis.

The research by Turner and Gilpin-McMinn also investigated the functions specific to each slave system—the articulatory loop and visuo-spatial sketch pad. How these two slave systems interact with the central executive was the primary concern of the present research. Recently, investigators have devised tasks to investigate the nature of the central executive. One way is to activate one of the slave systems through a primary task while simultaneously activating the central executive with a secondary task and to observe the interference. For example, Gilhooly, Logie, Wetherick, and Wynn (1993) found random-digit generation, not random finger tapping nor articulatory interference, decreased participants' performance in a syllogistic reasoning task believed to utilize the central executive component of WM. These results suggested that visual-spatial WM spans, reflecting the visual-spatial component of WM, may also be affect-

Marilyn L. Turner from Wichita State University was the faculty sponsor for this research project.

ed by random-digit generation as a secondary task because of the large demand placed on the central executive to randomize order. Random-digit generation may place large demands on the central executive, thereby leaving fewer central executive resources to control placing the to-be-remembered locations in the visuo-spatial sketch pad. In other words, the controlling function of the central executive over the visuo-spatial sketch pad may be deferred as a result of having allocated the required resources to random-digit generation; the generation task simply takes up the limited capacity of the WM component.

I want to emphasize that most of the results described above were obtained using measured younger adults. This study examined the WM processes of both younger and older adults. Research has found age-related differences in many WM tasks thought to require working memory capacity and, more specifically, the use of the articulatory loop component. (Hartley, 1986; Light & Anderson, 1985; Stine & Wingfield, 1987; Welford, 1958) For example, Morris, Gick, and Craik (1988) hypothesized that WM spans in older participants would be more affected by task complexity than younger participants using a sentence verification task believed to use the articulatory loop component of WM. The authors' prediction assumes that WM limitations on processing resources increased with age, therefore older participants should show greater limitations, or decreased performance, than younger participants. Participants were asked to verify sentences that varied in complexity while concurrently rehearsing zero, two, or four unrelated words. After participants verified complex sentences, they were asked to recall the unrelated words in serial order. Their results showed that older participants did as well, if not better, than the young participants in recalling unrelated words; however, when sentence complexity was increased, older participants took significantly longer to verify sentences than younger participants.

Hasher and Zacks (1988) proposed yet another view about age-related decline in WM. They argued that the process of inhibition could be used to explain findings of age-related differences in WM. According to the inhibition model, inhibitory mechanisms that underlie selective attention act as a suppressor of irrelevant stimuli considered non-task relevant as determined by the task itself and the intentions of the participant. One proposal is that WM deficits in older participants are the result of their inability to inhibit irrelevant information (Hasher, Rypma, Stoltzfus, & Zacks, 1991). In light of this proposal, I expected that the older group would have more difficulty than the younger group inhibiting irrelevant information (i.e., inhibiting the learned order relationship between all of the digits). For participants to generate random-digits successfully, they would also have to inhibit the nonrandom order of the digits as they appeared in everyday occurrences (1, 2, 3, 4, 5, 6, etc.). Accordingly, if the efficiency of an inhibitory mechanism is the reason for age-related decline, one should find that older adults have greater difficulty in inhibiting digit order while focusing on a to-be-remembered target location.

In summary, the purpose of the experiment was to investigate the effects of random-digit generation, thought to be a central executive function, on visual-spatial WM spans of younger and older adults. We used a visual-spatial location span task believed to require activation of, and therefore reflect the visual-spatial component of WM. The hypothesis was that random-digit generation would affect visual-spatial spans by placing increased demands on the central executive. An additional hypothesis predicted that span scores of older participants would be more affected by random-digit generation than those of younger participants because of age-related limitations on WM, resulting from the inability to inhibit irrelevant information. If WM limitations do increase with age (Dirx & Craik, 1992; Morris et al., 1988; Salthouse, Mitchell, Skovronek & Babcock, 1989), then a reasonable hypothesis is that span performance should decrease more in older than younger participants because of greater demands placed on the central executive component during random-digit generation.

Method

Participants

Twelve younger (ages 20-49 years) and 10 older (ages 60-73years) adults took part in this experiment. The younger participants had a mean age of 39 years, whereas older participants had a mean age of 68.7 years. Younger participants were students at Wichita State University (WSU), and older participants were selected through newspaper ads or were students at WSU. Students majoring in psychology received credit for their participation, and all participants received baseline measures of their performances in the primary task conditions. The goal of the Cognitive Lab at WSU is to provide baseline memory scores for our participants' future access.

Materials

Small triangles (white outline) identical in shape and size served as location stimuli; triangles were randomly placed in sets of 5 x 5 stimulus matrices (20 x 20 character grid) and presented from a 16 in. Zenith color monitor. The 5 x 5 matrix was white and presented on a black background. Answer sheets on 8 x 11 inch paper, identical to the stimulus matrix in size and shape, were given to participants prior to each task condition for recording stimulus locations.

Design and Procedure

A 2 x 2 x 4 mixed factorial design was used in the working memory task manipulation. Age was a between-subjects variable (younger vs. older), type of secondary tasks (random-digit generation vs. no interference) and set size (2 - 5) were a within-subjects variables. Order of interference was counterbalanced across participants. Prior to the spatial location tasks, participants received a series of standardized tests on a separate day prior to the WM tasks. Tests were the Revised Minnesota Form Board (Libert & Quasha, 1941), Nelson-Denny Reading Comprehension (Nelson & Denny, 1973), and two subtests (i.e., the Tower of Hanoi and Visual Test.) from the Colorado Neuropsychology Test Battery (Hasker, Bajszar, & Squire, 1992).

Span Task

Participants completed two visual spatial location span tasks presented from a computer monitor in one session lasting 45-55 minutes. The primary task required participants to remember the cell locations of (2-5) randomly presented triangles within a 5 x 5 matrix. Matrix onset duration was 0.75 s, with an ISI of 0.75 s between matrices. Set size (number of stimulus locations) varied in each trial from two to five, and each set size consisted of 4 trials equating to 16 trials per task condition. Upon termination of each trial, the word recall was displayed in the center of the screen, at which time participants would record the stimulus locations on an answer matrix identical to the matrix on the computer screen. In the random generation condition participants were asked to say digits between 1 and 10 as fast as they could without using any order (e.g. 1, 2, 3, or 2, 4, 6, 8) while performing the primary location task. The experimenter monitored generation order.

Scores

Scores for each participant in both spatial memory tasks included span scores and standardized test scores.

Span Scores. Performance in both visual spatial memory task conditions consisted of absolute spans and set size spans. The absolute span is the total number of correctly identified cell locations across all trials in each task condition. The set size span is the total number of correctly identified cell locations in each specific set size (2 - 5). The absolute span score is figured by taking the total number of locations for all 16 trials (N=54) and dividing that number by the number each participant answered correctly. The set size span score is figured by taking the total number of locations for each set size and dividing that score by the actual number correct.

Standard Test. The Revised Minnesota Form Board Spatial Abilities Test consists of 64 multiple choice questions. Each question consists of a geometric shape and requires participants to select from five shapes the one that could be constructed from the given geometric shape. Participants were allotted 15 min to complete this test.

The Nelson-Denny Reading Comprehension Test requires participants to read eight passages of text and answer a series of multiple choice questions. Participants had 15 min to finish the test. Reading rate was figured by asking participants to stop after the first minute and to record the number of words they had read.

The Tower of Hanoi is a puzzle that consists of a three block pyramid; each block has a different shape—small, medium, and large—with the smallest on top. The object of the task is to reconstruct the pyramid on another peg with the smallest block on top. The catch was that there was one peg between the peg of origin and the desired reconstruction peg, and in order to move each block to the desired peg, only smaller pegs could be placed on top of larger pegs. Participants' scores across four trials consisted of the total number of pegs they moved to reconstruct the pyramid successfully.

The Visual Test is a memory test that consist of eight gray colored boxes presented on a computer screen. The task requires participants to view the eight boxes while, depending on the set, either two, four, six, or eight of the boxes flash a color in sequential order. The participant must serially recall which boxes flashed by clicking a mouse on each box. Sets are presented in order from two, four, six, and eight, and each set has two trials. There is

no time limit to complete this task.

Results

ANOVAs

The total number of correctly identified stimulus locations were analyzed using a three-way ANOVA for age (younger x older), set size (1 - 5), and random-digit generation (present x absent). Figure 1 shows the significant main effect of set size, $F(3, 22) = 11.17$, $p < .0002$. Thus participants' recall of stimulus locations decreased as spans increased. The interaction between age and set size was not significant, $F(3, 22) = .02$, $p > .9957$. Unexpectedly, set size spans for older participants tended to be higher than the younger participants in all set sizes, especially in set size five (see Figure 1). This result did not support the hypothesis. The interaction between age, set size, and random-digit generation was also not significant, $F(3, 22) = .11$, $p > .9507$.

Figure 2 shows the mean span scores across all set sizes with and without interference (random-digit generation). In the no interference condition span scores for younger participants were higher than those of older participants in all set sizes except set size five. However, in the interference condition, span scores for older participants were higher than younger participants in all set sizes, contrary to our hypothesis.

Correlations

Table 1 shows the correlations between standardized test scores and visual-spatial span scores with and without interference. There was a positive correlation between issued and improved spans without interference and the Visual Test, $r(22) = .55$, $p < .03$. There was a negative correlation between the Tower of Hanoi and visual-spatial spans without interference, $r(22) = -.63$, $p < .0004$. In other words, participants who required more time to complete the Tower of Hanoi task had lower scores on the visual-spatial span task. These two correlations supported the results obtained through ANOVAs results in that standardized test scores accurately predicted performance on the primary task as measured through visual-spatial span scores without interference. Correlations between visual-spatial spans with interference and both the Visual Test and the Tower of Hanoi were significant (see Table 1). Visual-spatial spans did not correlate with Minnesota Form Board scores and no correlations were found between visual-spatial span scores and other standardized tests.

Discussion

The goal of this research was to investigate the effects of random-digit generation on visual-spatial WM spans, and to determine whether younger and older adults' spatial span scores were affected differently by random-digit generation. Major predictions were that visual-spatial WM spans would be affected by random-digit generation and that older adults would be more affected by random-digit generation than their younger counterparts because of an increase in WM limitations. Data supported the hypothesis that random-digit generation appeared to

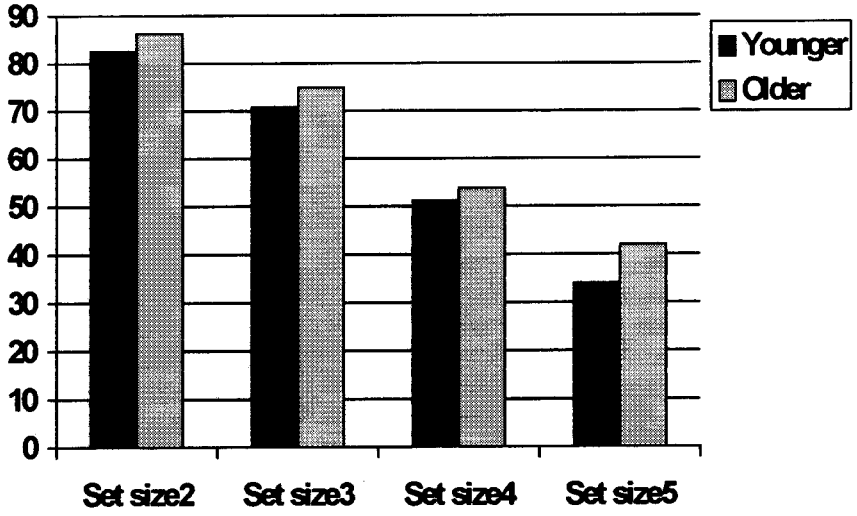

Figure 1. Set size spans for younger and older adults as measured in a primary visuo-spatial location task.

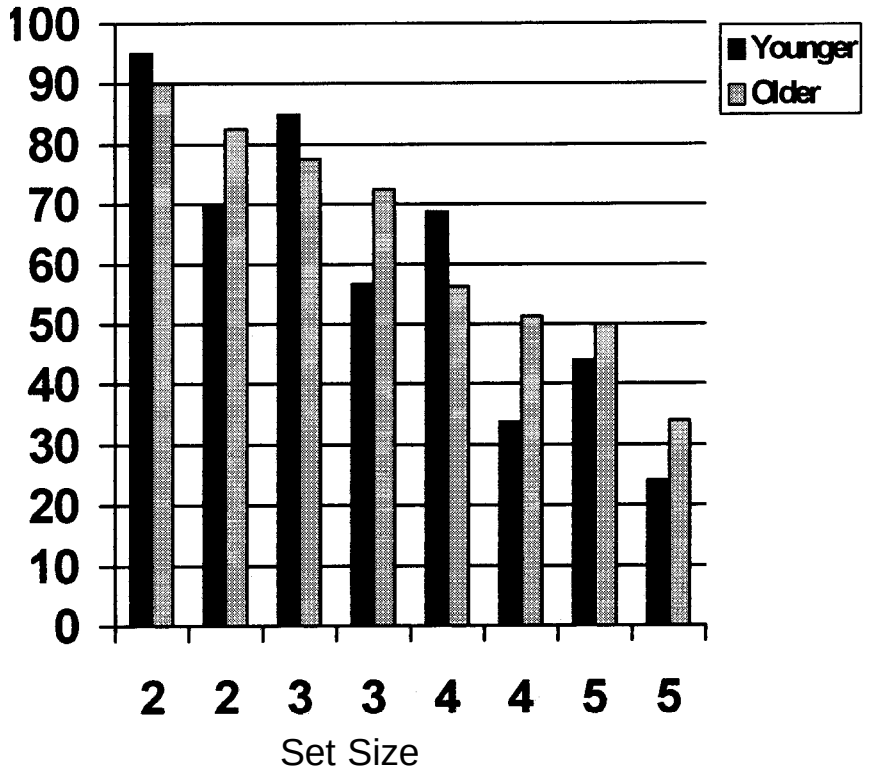

Figure 2. Set size spans of younger and older adults with and without random-digit generation as measured in a primary visuo-spatial location span task.

Table 1
Correlations Between Ability Measures and Working Memory Spans with and without Interference

	Working Memory Spans	
Ability Measures	With Interference	Without Interference
Nelson Denny	-.12	.05
Minnesota Form Board	-.10	.14
Tower of Hanoi	.02	-.63***
Visual-Digit Test	.47	.55**

**$p < .03$ ***$p < .0004$

place a large demand on the central executive and its controlling functions over the visuo-spatial sketch pad. The finding that older participants' visual-spatial span scores were higher, or less affected, in all set sizes measured with interference is contrary to others' findings that support age-related limitations in working memory capacity (Dirx & Craik, 1992; Morris et al., 1988; Salthouse, 1988; Salthouse & Mitchell, 1989; Salthouse & Prill, 1987) and more specifically with age differences attributable to the WM's central executive component (Morris et al., 1988). One explanation for these results may be the task itself. Because the task was a dual-task, older participants may have attended more to the primary task (remembering item locations) while attending less to the secondary task (saying random-digits). If this explanation were true, span scores of younger participants, regardless of the interference condition, would have been higher than span scores of older participants in set size five because of the high span load. Such a result was not evident. In fact, older participants did better than younger participants in set size five with and without interference.

Our findings supported the notion that a central processing component is required in the random-generation process. However, we did not find any evidence that suggests central executive limitations or inhibition of irrelevant information (i.e., inhibiting digit order, as proposed by the Hasher and Zacks (1988) theory of inhibition) were responsible for age-related differences in this exper-

iment. Results indicated that older participants had as much difficulty as younger ones in randomizing digits. However, to infer this conclusion necessitates some kind of recorded measure of random-digit generation taken from both groups, which is planned for future studies that attempt to measure the randomness of generated digits. Evans (1978) outlined such a possibility when devising his own index to measure the randomness of generated digits.

Correlations between the Visual Test scores and visual-spatial spans without interference suggested the visuo-spatial sketch pad had a primary role in both tasks. This finding was expected because both tasks required participants to store multiple items both visually and spatially in working memory. There was, however, no significant correlation between the Visual Test scores and visual-spatial spans with interference. One explanation is that random-digit generation placed limitations on the central executive's function of allocating both visual and spatial information to the visuo-spatial sketch pad.

Correlations between the Tower of Hanoi test and visual-spatial spans with and without random-digit generation also supported a conclusion about the involvement of the central executive component during random-digit generation. Scores from the Tower of Hanoi test did predict visual-spatial span performance when participants did not have to generate digits randomly. However, the lack of correlation between visual-spatial spans with random-digit generation and test scores for the Tower of Hanoi further suggested that random-digit generation placed demands on the central executive component of WM.

Data from the present study are inconsistent with many other studies regarding age-related decline in WM and decrements attributed to the central executive component of WM. Evidence supports a conclusion that random-digit generation involves some central executive control because of the significant decrease visual and spatial span performances with and without interference. However, a most interesting finding was that older group participants' visual-spatial span scores appeared to be less affected by random-digit generation than younger participants. Possibly, those in the older group had a higher span capacity than is typical for that population; however, their scores on standardized tests were not greater than the norm.

Studies are currently being conducted on the nature of the central executive and its relationship to age-related decline in WM. Although many of these studies are providing fruitful insights about the function of working memory, the use of random-digit generation as a reliable interference task to visuo-spatial sketch pad functioning needs further investigation because data from the present study is inconsistent with that from studies of working memory that have found better performance in younger than older adults.

References

Baddeley, A. D. (1992). Working memory. *Science, 255*, 556-559.

Baddeley, A. D., & Hitch, G. J. (1974). Working memory. In G. H. Bower (Ed.), *The psychology of learning and motivation* (Vol. 8, pp. 47-89). New York: Academic Press.

Dirx, E., & Craik, F. I. (1992). Age-related differences in memory as a function of imagery processing. *Psychology and Aging, 7,* 352-358.

Evans, F. (1978). Monitoring attention deployment by random number generation: An index to measure subjective randomness. *Bulletin of the Psychonomic Society, 12*, 35-38.

Gilhooly, K. J., Logie, R. H., Wetherick, N. E., & Wynn, V. (1993). Working memory and strategies in syllogistic-reasoning tasks. *Memory & Cognition, 21*, 115-124.

Hartley, J. T. (1986). Reader and text variables as determinants of discourse memory in adulthood. *Psychology and Aging, 1*, 150-158.

Hasher, L., Rypma, B., Stoltzfus, E. R., & Zacks, R. T. (1991). Age and inhibition. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 17*, 163-169.

Hasher, L., & Zacks, R. T. (1988). Working memory, comprehension, and aging: A review and a new view. In G. H. Bower (Ed.), *The psychology of learning and motivation: Advances in research and theory* (Vol. 22, pp. 193-225). New York: Academic Press.

Hasker, P. D., Bajszar, G., & Squire, L. R. (1992). *Colorado Neuropsychology Tests.* Colorado Spring, CO: Colorado Neuropsychology Tests Co.

Light, L. L., & Anderson, P. A. (1985). Working memory capacity, age, and memory for discourse. *Journal of Gerontology, 40*, 737-747.

Likert, R. & Quasha, W. H. (1941). *The Revised Minnesota Paper Form Board Test*. New York: The Psychological Corporation.

Logie, R. H., & Baddeley, A. D. (1987). Cognitive processes in counting. *Journal of Experimental*

Psychology: Learning, Memory, & Cognition, 13, 310-326.

Morris, R. G., Gick, M. L., & Craik, I. M. (1988). Processing resources and agedifferences in working memory. *Memory & Cognition, 16,* 362-366.

Nelson, M. S. & Denny, E. D. (1973). *The Nelson-Denny Reading Test.* Boston: Houghton Mifflin.

\Salthouse, T. A. (1988). The role of processing resources in cognitive aging. In M. L. Howe & C. J. Brainerd (Eds.), *Cognitive development in adulthood* (pp. 185-239). New York: Springer-Verlag.

Salthouse, T. A., & Mitchell, D. R. D. (1989). Structural and operational capacities in integrative spatial ability. *Psychology and Aging, 4,* 18-25.

Salthouse, T. A., Mitchell, D. R. D., Skovronek, E., & Babcock, R. L. (1989). Effects of adult age and working memory on reasoning and spatial abilities. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 15,* 507-516.

Salthouse, T. A., & Prill, K. A. (1987). Inferences about age impairments in inferential reasoning. *Psychology and Aging, 2,* 43-51.

Stine, E. L., & Wingfield, A. (1987). Process and strategy in memory for speech among younger and older adults. *Psychology and Aging, 2,* 272-279.

Turner, M. L., & Gilpin-McMinn, J. (1993, November). *Effects of similarity on young and old working memory spans.* Paper presented at the annual meeting of the Psychonomic Society, Washington, DC.

Welford, A. T. (1958). *Aging and human skill.* London: Oxford University Press.

The Effects of Parenting Style on Psychological Reactance

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This study examined the effects of parenting style on psychological reactance. Sixty-three male and female college students completed a questionnaire on family dynamics and parenting behaviors, the Hong and Page (1989) Psychological Reactance Scale, and reported how they would respond to four reactance eliciting scenarios. The results indicated that men whose mothers were authoritarian and women whose mothers were permissive showed greater reactance on both the scale and in their responses to real-life scenarios. These results suggest that mothers' parenting style has an effect on the level of reactance individuals display when their freedom of choice appears threatened.

Why do some people perceive societal rules as designed to limit their chances for doing what they want, whereas others interpret the rules as simply something with which everyone must cope? According to Brehm's (1966) theory of psychological reactance, individuals whose freedom of choice is threatened or constrained demonstrate reactance, a motivational drive directed toward the re-establishment of their freedom. Studies have shown individual differences, such as self-esteem and learned helplessness, can affect the likelihood that reactance will be manifested. For example, Brockner and Elkind (1985) demonstrated that people with high self-esteem are more likely to react to threats to their freedom than those with low self-esteem. Brockner, et al. (1983) found that individuals with high self-esteem who fail experience greater reactance than those with low self-esteem under similar conditions.

Mikulincer (1988) conducted a study to examine the effects of attributional style on reactance and learned helplessness. He found that when failure comes in small amounts, individuals who have internalized attributions not only experience more frustration, but also demonstrate stronger reactance compared to individuals with externalized attributions.

Parents are another important source of individual differences and a common source for restricting an individual's freedom. Baumrind (1967) found two broad dimensions of parenting behavior. The first was control or demandingness. Some parents establish high standards and expect their children to meet these standards, whereas other parents are less controlling and demanding and rarely inhibit their children's behavior. A second dimension is responsiveness or child-centeredness. Although some parents are aloof, rejecting, and unresponsive to their child's needs, other parents are responsive, highly accepting and engage in a give and take relationship with the child.

Baumrind's model suggests that these two dimensions interact to produce four parenting styles. Authoritarian parents are demanding and unresponsive. Their children are typically withdrawn and unhappy, insecure and anxious when interacting with their peers, and when frustrated, they have a tendency to react with hostility. Such reactions suggest that those children will exhibit a greater tendency toward psychological reactance.

Authoritative parents are controlling and demanding while at the same time nurturing, warm, and sensitive to the child's point of view. Their children tend to be more self-reliant, self-controlled, independent, and achievement oriented, and therefore, they may be least likely to exhibit psychological reactance.

Permissive parents tend to be nurturing but avoid imposing controls. Their children are often highly impulsive, immature, disobedient, and explosive when asked to do something that conflicts with their immediate desires. They are, therefore, also likely candidates for exhibiting psychological reactance.

Uninvolved parents display little commitment to their parenting role because they are consumed by daily pressures and stresses in their lives. Maccoby and Martin (1983) found these parents' attempts at enforcing rules to be fleeting, with minimal effort given to any long term goal. Their children showed a higher frequency of involvement in drug and alcohol consumption, difficulties at school, behavior and mis-

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conduct problems, and showed signs of psychological distress (Lamborne, Mounts, Steinberg, & Dornbusch, 1991). Without the experience of coping with authority, these individuals may be likely to exhibit psychological reactance.

Other aspects of parenting that can play a role in the development of individuals more likely to exhibit psychological reactance are differences between mothering and fathering, especially if one of the parents is the primary disciplinarian. Mothers rated as over controlling and intrusive were found to have children that participated in more aggressive and antagonistic interactions with their siblings (Volling & Belsky, 1992). Such interactions might indicate a greater likelihood of exhibiting psychological reactance. Sroufe and Fleeson (1986) suggested that the primary caretakers influence how children learn to interact with others.

The purpose of this study was to determine if parenting style affects the extent to which individuals will perceive everyday situations as freedom threatening and will, therefore, exhibit psychological reactance to restore that freedom. Parenting style consisted of four types: authoritarian, permissive, authoritative, and uninvolved. I hypothesized that individuals whose parents were either authoritarian or permissive would exhibit greater psychological reactance. The study incorporated a 4 (parenting style) x 2 (parent gender) x 2 (participant gender) factorial design.

Method

Participants

Sixty-three introductory psychology students (20 men and 43 women) participated in the study. Students ranged in age from 18 to 26 years. All participants agreed to participate and received course credit.

Measures

Psychological reactance was measured in two ways. First, the 18 item Psychological Reactance Scale, devised by Mertz (1983) and revised by Hong and Page (1989), was administered. Items were scored on a 5- point Likert-type scale ranging from 5 (*agree completely*) to 1 (*disagree completely*). The lowest possible reactance score was 18 and the highest possible score was 90. Items included statements such as: "Strong praise makes me skeptical" and "Advice and recommendations easily induce me to do just the opposite."

The second measure of psychological reactance was the participants' reactions to the four scenarios (see Table 1 for brief descriptions). These scenarios presented situations that could be interpreted as an infringement on the individual's freedom. Participants were asked how they would respond if they were the person in the scenario. Students' answers were scored from 1 (*low*) to 5 (*high*) depending on the level of reactance they displayed. For example, the drive scenario answers ranged from breaking the law (*high reactance* = 5) to complying with the new state regulations (*low reactance* = 1). A social psychologist, who was not given other information about the participants, assigned the scores to the answers.

Parenting style was measured by a parenting behaviors questionnaire based on the questionnaire developed by Lamborne et al. (1991). Participants rated each item separately for nurturance and control for both the mother and father. A median split was performed in order to classify parenting style. Low nurturance and high control

Table 1
Brief Synopses of the Four Reactance Eliciting Scenarios

Scenario	Synopsis
Romeo and Juliet	A sixteen year old girl and a twenty year old boy are dating. The girl's parents decide the relationship is getting too serious and suggest the relationship be ended.
Haircut	Two friends get together after a few months of not seeing each other. One has let his hair grow a little longer than usual and the other suggests he get a haircut.
Register	A class was omitted on the computer printed class schedule of a young man. He was told the class is now closed and he would have to go through registration again.
Drive	A young man nearing his 18th birthday is told by his parents his father is being transferred to a different state where the driving regulations are different than his current state of residence, including a higher driving age. The move will be immediate.

defined authoritarian parents. High nurturance and high control defined authoritative parents. High nurturance and low control defined permissive parents. And, low nurturance and low control defined uninvolved parents. The questionnaire about parenting behavior contained items such as: "He keeps pushing me to think independently," and "My mother knew exactly where I was most afternoons after school."

Procedure

Participants were tested in one of three sessions held in a classroom. They completed the revised Psychological Reactance Scale (Hong & Page, 1989) and the parenting behaviors questionnaire. The order of completing these instruments was counterbalanced. Participants indicate how they would respond to the four scenarios designed to elicit reactance. The study took approximately 30 min to complete. Consent forms were filled out prior to participation.

Results

The first set of analyses used the revised Psychological Reactance Scale (Hong & Page, 1989) as a measure of reactance. A 4 (parenting style) x 2 (participant gender) analyses of variance of total reactance scale scores was conducted separately for both participants' fathers and mothers. There were no significant differences in reactance among parenting styles for participants' mothers or fathers. However, there was a significant interaction $F(1, 62) = 7.59$, $p < .05$, between the mothers' parenting style and the participant gender (see Figure 1). Men whose mother were authoritarian showed greater reactance ($M = 63.75$), $F(1, 10) = 11.33$, $p < .01$, than women with authoritarian mothers ($M = 44.29$). No other participant gender differences were significant. Men whose mothers were authoritarian showed greater reactance than those whose mothers were authoritative, $F(1, 7) = 7.12$, $p < .05$. There were no other significant differences in parental style among men. Women whose mothers were authoritarian showed less reactance than those whose mothers were either permissive, $F(1, 19) = 4.39$, $p < .05$ or authoritative, $F(1, 19) = 3.56$, $p < .07$. There were no other significant differences in reactance scores involving parental style for women.

The second measure of reactance was subjects' responses to the scenarios. The correlations among the reactions to the scenarios ranged from $r(63) = .29$, $p < .05$ to $r(63) = .32$, $p < .05$. Because the intercorrelations among the reactions were significant, a composite score was derived by adding the subject's reactions to each of the scenarios and dividing by 4.

There were no significant differences in reactions to scenarios for parenting style, separately for participants' mothers or fathers. There was, however, an interaction between parenting style of mothers and participant gender, $F(1, 62) = 2.99$, $p < .05$, (see Figure 2). Men whose mothers were authoritarian showed greater reactance ($M = 3.50$) than women with authoritarian mothers ($M = 2.10$), $F(1, 10) = 15.28$, $p < .01$. Women with permissive mothers showed marginally greater reactance ($M = 3.96$) than men with permissive mothers ($M = 2.93$), $F(1, 12) = 2.16$, $p < .17$. For men, there was no differences in reactions to scenarios among parental styles. Women, whose mothers were permissive, showed greater reactance in comparison to those whose mothers were authoritarian, $F(1, 14) = 21.82$, $p < .001$; authoritative, $F(1, 18) = 6.29$, $p < .05$; or uninvolved, $F(1, 24) = 7.40$, $p < .01$. In addition, women whose mothers were authoritarian showed

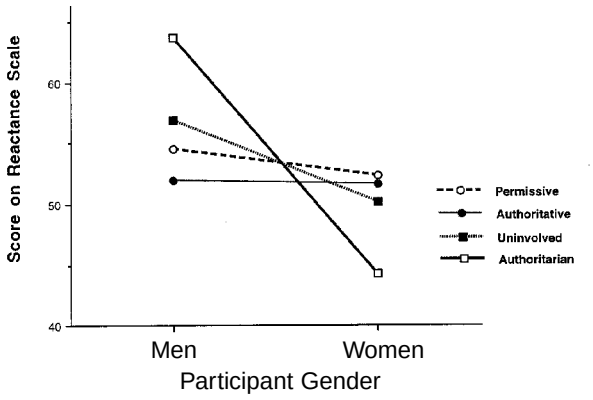

Figure 1. The affects of mothers' parenting style on reactance scale scores.

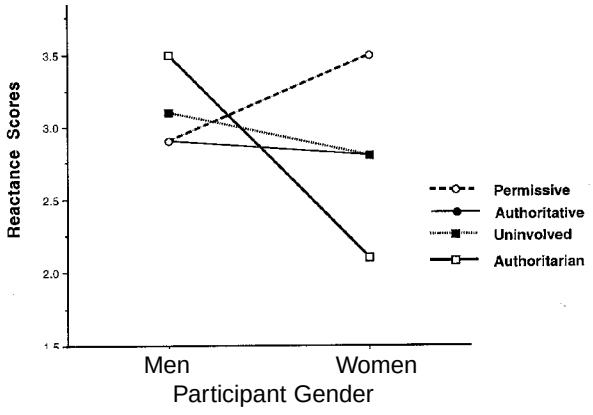

Figure 2. The affects of mothers' parenting style on reactance to scenarios.

less reactance than those whose mothers were authoritative, $F(1, 23) = 7.52$, $p < .01$, or uninvolved, $F(1, 27) = 4.18$, $p < .05$. For women, there were no differences in reactions to scenarios among parental styles.

Discussion

The hypothesis that individuals whose parents were either authoritarian or permissive would exhibit more psychological reactance was partially supported. The data support the conclusion that mothers' but not fathers' parenting style affected reactance.

Men whose mothers were authoritarian exhibited high reactance. One possible cause for this reactance may be related to being parented by a traditional mother. In such a parenting role, mothers provide necessary information for children's development, but the fathers have minimal input. However information from sources outside the family may conflict with the mothers' demands. As young boys mature, their position in a traditional family often changes to one of increased dominance, and the mother/child relationship ceases to exist as gender becomes an issue. Steinberg (1981) observed greater conflict between mothers and adolescent boys than between fathers and their sons. Thus, boys may become more resentful of "bossy" mothers and therefore more reactive to infringement on their personal freedom. Young girls, on the other hand, may still assume the more traditional submissive role. They may see themselves as their mothers' equal or their mothers' subordinates and, therefore, be less reactive to infringement of their freedom.

Women whose mothers used a permissive style of parenting showed greater reactance than men with permissive mothers. These young women may have had little experience in dealing with authority because of lax rules and restrictions in the permissive family. When entering a society filled with restrictions and threats to their personal freedom, young women may become more likely candidates to exhibit reactance. Young men with permissive mothers have grown up in an environment with fewer restrictions or threats to their personal freedom, and that environment more closely resembles the one in which they will live as adults. Thus, one could expect less reactance.

Previous research has indicated that the analysis of family structure is complex, and experimenters have difficulty controlling for confounding variables. Sex of siblings, socioeconomic status, continuity of parenting styles, and age spacing between siblings are just a few variables that may interact with parenting style to affect psychological reactance. Further research questions could include: (a) what role do family dynamics (stepparents, grandparents, absent parents, foster parents or adoptive parents) play in the development of psychological reactance? (b) what effects do socialization and cultural norms have on the level of reactance exhibited by individuals?

References

Baumrind, D. (1967). Child care practices anteceding three patterns of preschool behavior. *Developmental Psychology Monographs, 75,* 43-88.

Brehm, J. W. (1966). *The theory of psychological reactance.* New York: Academic Press.

Brockner, J., Gardner, M., Beirman, J., Mahan, T., Thomas, B., Weiss, W., Winters, L., & Mitchell, A. (1983). The roles of self-esteem and self-consciousness in the Wortman-Brehm model of reactance and learned helplessness. *Journal of Personality and Social Psychology, 45,* 199-209.

Brockner, J., & Elkind, M. (1985). Self-esteem and reactance: Further evidence of attitudinal an motivational consequences. *Journal of Experimental Social Psychology, 21,* 346-361.

Hong, S., & Page, S. (1989). A psychological reactance scale: Development, factor structure and reliability. *Psychological Reports, 64,* 1323-1326.

Lamborne, S., Mounts, N., Steinberg, L., & Dornbusch, S. (1991). Patterns of competence and adjustment among adolescents from authoritative, authoritarian, indulgent, and neglectful families. *Child Development, 62,* 1049-1065.

Maccoby, E., & Martin, J. (1983). Socialization in the context of the family: Parent-child interaction. In E. M. Hetherington (Ed.), *Handbook of child psychology: Vol. 4. Socialization, personality, and social development* (4th ed., pp. 104-117). New York: Wiley.

Mertz, J. (1983). Fragebongen zur messung der psychologischen reaktanz [Questionnaire for measuring psychological reactance]. *Diagnostics, 29,* 75-82.

Mikulincer, M. (1988). Reactance and helplessness following exposure to unsolvable problems: The effects of attributional style. *Journal of Personality and Social Psychology, 54,* 679-686.

Sroufe, L., & Fleeson, J. (1986). Attachment and the construction of relationships. In W. W. Hartup & Z. Rubin (Eds.), *Relationships and development* (pp.-51-72). Hillsdale, NJ: Lawrence Erlbaum Publishers.

Steinberg, L., D. (1981). Transformations in family relationships at puberty. *Developmental Psychology, 17,* 833-840.

Volling, B, & Belsky, J. (1992). The contribution of mother-child and father-child relationships to the quality of sibling interactions: A longitudinal study. *Child Development, 63,* 1209-1222.

Attention Deficit Hyperactivity Disorder Labeling: Impact on Children and Caregivers

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Some investigators consider attention deficit hyperactivity disorder (ADHD) a diagnostic label that may stimulate labeling effects and bias in caregivers and labeled students. Following a review of labeling effects on perceptions and interactions, I will describe the characteristics and history of ADHD. I will point out that the diagnostic category, ADHD, is historically confusing and remains filled with variability. I will discuss possible cases of labeling bias as well as the social-cognitive effects of pharmacological treatment. Future research should investigate influences of the ADHD label on perceptions, interactions, and assessment of treatment. Research should also focus on skills and knowledge necessary for teachers to educate ADHD children.

Imagine an average grade school teacher in charge of 25 students displaying varying levels of achievement. Now suppose there is a student who is constantly off-task, usually out of his/her seat, and often making loud noises that disrupt the class. Is this student just unusually active or affected by a medical disorder? Attention deficit hyperactivity disorder (ADHD) is commonly understood to consist of three main symptoms; (a) inattention, (b) impulsivity, and (c) hyperactivity (Brancelone, 1988; Wenar, 1990). What if the child has been diagnosed with ADHD? Does this diagnosis change how the teacher views and attempts to teach the child? Should it? How do children labeled as ADHD feel about themselves? This review attempts to answer these questions.

Medical and clinical literatures give examples of both positive and negative labeling effects of patient diagnoses (Critchley, 1979; Devadasan, 1983). There can be therapeutic value in correct diagnoses, but there can also be negative effects associatied with negative feelings toward a label. Despite concerns that ADHD children are being overdiagnosed and overmedicated (Weaver, 1991), there has been little research about possible effects of the ADHD label on the feelings and actions of children and their caregivers, including parents and teachers. ADHD labeling is pervasive, affecting every aspect of a child's life. Additionally, taking a prescribed medication serves as a daily reminder of the ADHD label. There is a high likelihood that an ADHD label will affect both the child's self-concept as well as the perceptions of those who interact with him/her. Thus, the label may direct the course of interaction between the child and others.

A Review of Research on Labeling Effects

Effect on Perceptions

Several studies have focused on the effects of labels on teachers' and caregivers' perceptions. Darley and Gross (1983) studied positive and negative expectancies based on social status and implied that children came from either a relatively wealthy or a poor family. They suggested that expectancies can be used in a cognitive confirmation process in which observers selectively interpret, attribute, and/or recall specific aspects of a target person's behavior to confirm their hypothesis. Expectations based on perceived social status influenced how teachers perceived a child's ambiguous answers to achievement test problems. Participating teachers with a positive expectancy observed ambiguous answers of a child and rated the child's performance significantly higher than teachers who had a negative expectancy. However, there was minimal difference between the high or low expectancy subjects who did not observe the child. Thus, an expectancy can function as a hypothesis and can bias evaluations toward confirmation of this hypothesis.

In an experiment using clinical psychiatric nurses as participants, fictitious psychiatric labels affected all evaluations made by the nurses (Critchley, 1979). After viewing an identical sequence of play interview films for three normal children, the participating nurses evaluated the children who were labeled schizophrenic or obsessive-compulsive as significantly more disturbed than a child labeled normal.

Similarly, Paquin and Jackson (1977) had participants rate four target descriptions; three were composite psychopathological types, and one was a normal type. For half of the participants, these descriptions contained labeling information linking the description to a disorder or an undesirable social status (drug addict or ex-con-

Thomas Lee Budesheim from Creighton University was the faculty sponsor for this research project.

vict). The control group received no labels. Researchers found that the tendency to attribute psychopathology was lowest for the normal type target, but adding the label "alcoholic" resulted in significantly more attributions of psychopathology. Thus, labels providing discrepant information greatly influenced the perception of the subject. Furthermore, such a label decreased participants' consensus in predicting behaviors of a target. This result suggests that the focus may have shifted to behaviors implied by the label rather than behaviors implied by the composite normal type description. Paquin and Jackson (1977) concluded that "labels have a powerful simplifying effect…they serve to organize and solidify other trait inferential relationships, sometimes inaccurately, but with great resistance to change" (p. 114).

Bromfield, Weisz, and Messer (1986) found that people form different attributions, expectancies, and behavior prescriptions for children labeled mentally retarded than for unlabeled children. Even when the children performed at the same level, participants were more likely to attribute failures of children labeled mentally retarded to low ability rather than insufficient effort. Participants were less likely to believe such failure could be reversed.

Effect on Social Interactions

Labels may also influence social interaction. For example, in the Bromfield et al. (1986) study, participants indicated that the expectancy of failure in a child labeled mentally retarded would lessen their tendency to encourage a child to persist after failure.

A study by Jussim (1989) found several connections between expectancy and bias. Consistent with the self-fulfilling prophecy, when teacher perceptions of student talent led to high expectancies, students obtained higher final grades and standardized test scores than students for whom teachers had low expectations. This result occurred even though all students in the two conditions had similar previous grades and motivation. Teachers' expectations also influenced their judgments of performance. Children who were expected to try harder received higher grades but not higher standardized test scores. Jussim also found that teachers' high evaluation of student performance led students to increase their self-concept of ability over the course of a year.

A study by Pitt (as cited in Rosenthal & Jacobson, 1968) in which the IQ of a group of boys was reported to the teacher as higher or lower, did not provide evidence supporting the self-fulfilling prophecy. However, Pitt did find evidence suggesting that teacher-student interactions were altered. He reported that at the end of the year, the boys in the group with the fictitiously lowered IQs felt that they did not work as hard as others, that school was more difficult for them, that the teachers were harder on them, and that school was less enjoyable. The negative feelings produced in this study may, in turn, have had a negative effect on other behaviors such as peer interactions. There is evidence showing that children displaying predominantly negative emotions exhibited varying deficits in social cognitive and/or prosocial domains (Denham, 1986). Increased anger was related to lesser social cognitive abilities and fewer prosocial behaviors.

A third study by Flowers (as cited in Rosenthal & Jacobson, 1968) used fictitious ability grouping rather than IQ. He found differences in the actions of teachers who thought they were teaching the higher ability groups. These teachers referred more often to what children should do, reported few discipline problems, referred more often to efforts to motivate pupils, and preferred teaching the "higher" ability group.

In psychiatric settings, Critchley (1979) warned that paying excessive attention to pathology and focusing on stereotyped behaviors and prognosis may lead to interaction triggered by negative rather than positive behavior. This interaction may be seen as reinforcement and thus reward such negative behavior.

In addition to information about the effect of labels, other experimental results indicate the importance of understanding labels. Nishiura and Yamada (1984) interpreted two case studies of patients diagnosed with hysteria, and concluded:

> When the patient and staff mutually understand the implications of diagnosis, the patient can make marked progress toward recovery. Often, however, there is no such mutual understanding, or the diagnostic label is treated clandestinely because of the common pejorative implications. In these cases, the therapeutic value of mutual acceptance and treatment strategies between patient and staff is lost to the patient. (p. 96)

In an attempt to answer whether or not labels can be helpful, Devadasan (1983) had groups of psychology and nonpsychology students complete the Matthew Maladjustment Inventory. After the test, students were informed that the group as a whole was extremely maladjusted, and the test was administered again. For the nonpsychology students, there was no significant change,

but the scores of the psychology students improved significantly. These results indicate that labels can have diagnostic uses, however, understanding the meaning of such labels is an important factor.

Theoretical Implications

Weisz (1981) noted the impact of labels on causal reasoning. He proposed that the label "mentally retarded" triggers salient low ability attributions and discounts low effort attributions. Another reaction, proposed by Katz (as cited in Bromfield et al., 1986), is the ambivalence-response amplification theory in which labels stimulate ambivalence about the labeled person and provoke exaggerated responses to that person. For example, instead of seeing a child as a multifaceted individual, an observer might be blinded by a schema of a generic "mentally retarded" or "hyperactive" child.

Thus, as research has shown, labeling can have a powerful effect on the cognitive processes of both the observer and those who are labeled. Not only can labels bias the perception of the observer, they may actually direct the course of interactive behavior in a positive or negative manner. How do such effects manifest themselves in the case of a disorder such as ADHD? Aside from the behavior caused by the disorder itself, are there also labeling effects influencing the teacher-child relationship? I will address these questions in the following sections.

ADHD: The Current Problem

Incidence

During the last few years, mainstreaming has steadily increased in elementary and secondary education (Roe, Stoodt, & Burns, 1991). Hence, teachers are more likely to encounter an increased number of learning and behavioral problems within the classroom. ADHD is just one disorder among many for teachers to consider; such evaluation may demand extra time from an already heavily taxed schedule. Attention deficit disorders are some of the most frequently diagnosed neurobehavioral disorders in childhood, estimated to affect up to 20% of the school-age population (Shaywitz & Shaywitz, 1992). ADHD, specifically, is estimated to affect 3% of all children (Brancelone, 1988).

Current Assessment of ADHD

Problems in the classroom

Children with ADHD display several common traits, but there is also a significant amount of variability. Durbin (1993), an elementary school teacher and graduate student, described eight principle characteristics that may be found, in any combination, in ADHD children. The first characteristic is inattentiveness, which is often manifested as difficulty in listening, completing assignments, staying on-task, and staying in their seats. Impulsiveness is an intolerance for delays and a tendency to speak and act without thinking. Hyperactivity is often triggered by task demand, and hyperactive children are distracted, moving, clowning, and disruptive. Four other characteristics include attention-demanding behavior, learning difficulties, coordination difficulties, and immaturity. Durbin's last characteristic, unacceptable social behavior, seems to be the most frequent cause of referral. Children fail to comply with adult requests and boundaries and are unable to maintain friendships. ADHD children, who exhibit higher frequencies of undesirable social behaviors than their peers, may be seen as irritating and objectionable. Aggression is also strongly related to ADHD (Whalen & Henker, 1985).

Assessments Methods

Currently, teacher ratings are the most frequent method of ADHD assessment. The Conners Teacher Rating Scale (CTRS) is the most frequently used noting device (Atkins & Pelham, 1992). The CTRS was the first standardized rating scale designed for use by teachers. Based on 39 items, CTRS evaluates five variables: Daydreaming-Inatentive, Hyperactivity, Conduct Problems, Anxious-Fearful, and Sociable-Cooperative (Atkins & Pelham, 1992). A revision of the scale is the Short-Form Conners (Atkins & Pelham, 1992). However, a study by Ullmann, Sleator, and Spraque (1985) indicated that this form selected children with hyperactivity but not with attentional deficits. There is also a problem with information from the CTRS short form overlapping with conduct problems.

In response to this overlap, other diagnostic tools are also used, including the IOWA-Conners Rating Scale, Swanson, Nolan, and Pelham (SNAP) Rating Scale, Teacher Rating Scales (not specific to ADHD), Teacher Ratings of Social Competency, Peer Ratings, and Direct Observations. For a complete summary, see Atkins & Pelham (1992).

Because behaviors may vary across settings, and because of the possibility of disagreement among evaluators, most researchers agree that multivariate assessment procedures are very important. In addition to attaining information from different caregivers across various situations, possible biases on the part of individual evaluators must be considered.

Current Classification of ADHD

There is no clear, unified classification system for ADHD. Fletcher, Morris, and Francis (1992) stated that

> there is continued disagreement and lack of precision on how to define the disorder and how ADHD is related to other childhood disorders. This controversy ranges from those who find no evidence for ADHD to those who find ADHD in every child they see. (p. 24)

The authors separate classification into two perspectives. Clinical perspectives result in diagnostic classifications, such as those in the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV*; American Psychiatric Association, 1994) and specify the core symptoms sufficient but not necessary for diagnoses. Quantitative perspectives are based on empirical studies and focus on the least possible reliable characterizations. These two views are not well integrated. Other concerns are the presence or absence of hyperactivity and overlap with other disorders, such as various learning disabilities and conduct disorders (Barkley, DuPaul, & McMurray, 1990). These factors hamper reliable classification. Different standards used to define ADHD populations in research have contributed to difficulties in evaluating ADHD as a distinct clinical syndrome. As Wenar (1990) explains, "Unless researchers are able to study pure cases of a diagnostic category…there is no way of knowing whether the obtained results apply to this category. Nowhere is this more important than in the case of ADHD" (p. 182).

DSM-IV *Classification*

The *DSM-IV* identifies three subtypes of ADHD. The first is ADHD, Predominantly Inattentive Type, which includes symptoms such as lack of attention to details in tasks, not listening, failing to finish work, difficulty organizing, avoiding tasks, losing necessary items, distraction, and forgetfulness. The second subtype is ADHD, Predominantly Hyperactive-Impulsive Type, which includes fidgeting, leaving one's seat, running or climbing inappropriately (restlessness), difficulty playing quietly, "being on the go," talking excessively, blurting out answers, difficulty waiting one's turn, and interrupting. Finally, ADHD, Combined Type includes at least six symptoms from each of the two other categories.

ADD+H/-H Controversy

Studies comparing ADHD children with or without hyperactivity seem to indicate that their social statuses among peers are very similar (Carlson, Lahey, Frame, Walker, & Hynd, 1987). Several studies found no significant differences, however there are some studies that suggest that the social problems of ADHD, Predominantly Inattentive Type (ADD-H) may be less severe, as indicated by fewer "liked least" peer nominations than children with ADHD, Predominantly Hyperactive Type (ADD+H) (Lahey, Schaughency, Strauss, & Frame, 1984). Edelbrock, Costello, and Kessler (1984) also found that ADHD children without hyperactivity may have better social functioning based on teacher ratings of popularity. A more recent study by Carlson et al. (1987) used clinical samples rather than samples identified by teacher ratings as in most previous research. They also controlled for codiagnoses and found no significant difference in peer nominations both with codiagnoses excluded or included. The only significant difference they found, even with the inclusion of codiagnoses (usually conduct disorders), was a higher number of nominations for fighting.

There have also been several studies indicating a difference in aggressive or withdrawn behavior based on the presence of hyperactivity. Barkley et al. (1990) found that ADD+H children were described by parents and teachers as more noisy, disruptive, messy, irresponsible, and immature, whereas ADD-H children were more confused, daydreamy, apathetic, and lethargic. A study by Lahey, Schaughency, Hynd, Carlson, and Nieves (1987) similarly found ADD+H children to be more impulsive and aggressive, although ADDH children had a more "sluggish cognitive tempo" and were more anxious. Hodgens and Weber (1992) found that the social behavior of ADD-H children was characterized by social withdrawal, and the behavior of ADD+H children was seen as significantly more aggressive.

Hyperactivity versus Aggression

In addition to exploring the differences between ADD+H and ADD-H, researchers have tried to distinguish between inattentive, overactive behavior and aggressive behavior. Milich, Loney, and Landau (1982) used ratings from psychiatric charts of clinic-referred boys and found independent dimensions of hyperactivity

and aggression. This information was used to develop a five-item Inattention/Overactivity (I/O) scale and a five-item Aggression (A) scale based on correlating items from the CTRS.

In support of this finding, a validation study by Milich and Fitzgerald (1985) found that the I/O teacher-rated scale was significantly correlated with observations of hyperactive behavior, including attention problems, off-task behavior, fidgeting, noncompliance, being out of one's seat, inappropriate peer interactions, and receiving high rates of negative feedback from teachers. They also found that A scale scores correlated with inappropriate locale, negative interaction with teacher, and physical aggression. In a similar study, Landau and Milich (1988) found high teacher ratings on the I/O factor were strongly correlated with a Hyperactivity Observation Scale, whereas high teacher ratings of aggression were strongly correlated with the Aggression Observation Scale. These findings were supported by a study utilizing multiple measures and methods of assessment that found that I/O and A scale scores were related to unique sets of behaviors that can be distinguished by teacher ratings.

In terms of social acceptance, apparently both ADD+H children with or without aggression are significantly less popular than control children, the aggressive children fall in between ADD+H and control groups (Landau & Moore, 1991). These subtle but distinct differences, still being determined, are part of a long history of confusion surrounding ADHD.

History of ADHD

Classification

The theoretical reasons for developing a specific diagnosis consist of (a) a common etiology, (b) a common treatment with a common response to that treatment, and (c) a common course for the disorder (Brancelone, 1988). Although ADHD has been studied for decades, scientists are still unsure about the correct etiology or most beneficial treatment. In the early 1900's, hyperactive behavior was thought to be a symptom of brain damage and was called "brain damage syndrome," or "minimal brain damage." In the 1960's, the term "minimal brain dysfunction" was used by neurologists who thought brain damage should not be inferred from only behavioral signs. (Brancelone, 1988; Collins, Whalen, & Henker, 1980).

Because of lack of evidence, the American Psychiatric Association did not use the term "minimal brain dysfunction" (MBD). The second edition of *Diagnostic and Statistical Manual of Mental Disorders* (DSM-II; American Psychiatric Association, 1968) defined hyperactive behavior as "hyperkineses." The third edition of *Diagnostic and Statistical Manual of Mental Disorder* (DSM-III; American Psychiatric Association, 1980) later changed the definition to attention deficit disorder (ADD) with/without hyperactivity. The revised third edition of *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III-R; American Psychiatric Association, 1987) then simplified the diagnosis to attention deficit hyperactivity disorder (Brancelone, 1988). The DSM-IV is consistent with the latter description.

Etiology

Although brain damage is no longer considered an etiologic agent for MBD, many scientists still think there is some link to brain malfunction (Wenar, 1990). Grodzinsky and Diamond (1992) hypothesized that ADHD is related to frontal lobe dysfunction and that ADHD children would perform more poorly on a number of behavioral functions associated with the frontal cortex. Results of their investigation indicated that ADHD boys were inferior to controls on frontal tasks considered sensitive to inhibition/impulsivity and on frontal tasks that required planning and organization of output. There were no differences on two tests sensitive to cognitive flexibility or on tests estimating IQ, suggesting that the differences observed were not because of differences in overall cognitive ability.

There is sufficient support to justify further investigation of other etiologies (Anastopoulos & Barkley, 1988). Studies should continue to explore the roles of genetics, biological variation of inborn temperamental differences, elevated lead levels, and prenatal exposure to nicotine and alcohol. Links to physiological problems provide some support for the use of pharmacotherapy.

The evolving beliefs and misperceptions about ADHD have culminated in a definition of ADHD that is unclear and often disputed. The many changing ideas about the etiology of the disorder illustrate the difficulty involved in assessing and treating a child with ADHD.

Treatment of ADHD

There are three basic categories of treatment used in cases of ADHD: pharmacotherapy, behavioral modification and cognitive training. Pharmacotherapy is the most

frequently used (Wenar, 1990), and the most common medications are stimulants such as Ritalin (methylphenidate), Dexedrine (dextroamphetamine), and Cylert (pemoline) (Henker & Whalen, 1980). The physiological mechanisms for how these drugs work are not yet fully understood, but numerous studies have shown some beneficial effects on the child. One of the most important results is that the child's actions become more situationally appropriate, and those behaviors generate a more positive global impression in teachers (Collins et al., 1980). Although teachers perceive an improvement inovert behaviors because of medication, the types of rating scales normally used have limited ability to assess additional areas of behavior such as social skills, cognition and academic achievements. Thus, although rating scales may report that 70% of ADHD children respond, laboratory measures may indicate that only 50% responded, and academic tasks may indicate less than 20% responded (Forness, Swanson, Cantwell, Guthrie, & Sena, 1992).

Changes brought about by medication can decrease negative interactions between a teacher and child (Landau & Moore, 1991; Whalen & Henker, 1992). The teacher is less controlling towards medicated children, but there may not be an increase in positive interaction (Landau & Moore, 1991). Findings also indicate that teachers ignored medicated children more than those receiving a placebo.

Another long-debated concern with respect to prescribing medication is the possibility of side-effects. Gadow (1981) summarized findings about stimulants that can; (a) induce a depression-like state, (b) cause abnormally low activity levels, (c) decrease social interactions, (d) alter temperament, and (e) impair cognitive tasks. Other researchers indicate the possibility of more serious problems, such as growth retardation or Tourette's Disorder, but incidents such as these are quite rare (Whalen & Henker, 1992). Most studies imply that stimulants are relatively safe (Anastopoulas, DuPaul, & Barkley, 1991; Wenar, 1990).

Behavior Therapy

Behavior therapy emphasizes reinforcing desirable behavior while ignoring or punishing undesirable behavior (Wenar, 1990). When implemented by teachers or parents, behavior therapy has succeeded in reducing disruptive behaviors and improving performance on a variety of tasks (O'Leary, Pelham, Rosenbaum & Price, 1976; Wenar, 1990). One disadvantage is the work involved in managing such a program. For example, several studies have reported the reluctance of teachers to use a response cost procedure (Rapport; Rosen, O'Leary, & Conway, (as cited in Atkins, Pelham & White, 1990). Additionally, parents and teachers may discontinue the carefully worked out treatment plans before children have sufficient self-control to act appropriately without environmental intervention.

Cognitive Therapy

Cognitive training studies, such as self-instructional training, cognitive modeling, self-monitoring, self-reinforcement, and cognitive problem solving have increased considerably in the past decade. In terms of measurable improvements, there is little evidence for success (Abikoff, 1991). However, in light of the social cognitive factors described in labeling studies, cognitive therapy may be an important addition to any treatment plan if it helps improve the child's self-concept. Further research is necessary to evaluate the use of cognitive training as a supplement to other treatments.

Multiple Interventions

Further research is also needed to evaluate the success of multiple interventions. Wenar (1990) suggested that, "Medication, behavioral treatment, remedial education, parental counseling, and family therapy should all be used as needed" (p. 195). Most researchers indicate that a combination of treatments is clearly optimal, but there does not seem to be an organized system for implementing such treatments (Robin & Bosco, 1980; Weaver, 1991). An emphasis on multiple interventions seems appropriate because of ADHD's many and varying characteristics. In addition, the ADHD label and the process of medication may cause problems with self-perception that should also be addressed.

A Review of ADHD Research About Labeling Effects

There is little research addressing the effects of ADHD labeling, although there are several studies addressing bias in diagnosing hyperactivity. There has been some indication that behavior rating scales may be influenced by a halo effect in which the elevation of one or a few behaviors may result in excessively high ratings (Abikoff, Gittleman-Klein, & Klein, 1977).

In one study to assess the correspondence between parent and teacher ratings, bias and halo effects were seen in the behavior ratings of both teachers and parents. Glow (1981) suggested that

> most importantly, consideration of the set of rating scales, from a single source, rather than reliance upon a single hyperactivity index, can help to disentangle high scores on a measure of hyperactivity that indicate a predominantly hyperactive child, from high scores on the hyperactivity measure that indicate a generally troublesome child or rater bias. (p. 143)

There are several characteristics of ADHD and its diagnoses that enhance the likelihood of labeling and bias effects. First, the fact that ADHD has a long history of changing classification and a somewhat unclear etiology and treatment plan may increase the use of simplified schemas for ADHD (Fiske & Taylor, 1991). People tend to use the most convenient level of categorization that works. Therefore, if the classification is confusing, caregivers may tend to rely on a very basic picture of a disorder. In the case of ADHD, however, a simple definition may be problematic as there are several subtypes and a variety of possible symptoms within each.

Darley and Gross (1983) found that teachers' perceptions of children were changed by a label only when they were given the opportunity to view the childrens' behavior. Even after seeing only ambiguous behavior, the teachers used the label to define their perceptions of the behavior. Darley and Gross proposed an expectancy confirmation process. They suggested that by using a cognitive confirmation process, the teachers selectively recalled and interpreted the child's behavior. One possibility is that such a process could also play a role in ADHD children, especially in light of the confusion surrounding the definition and diagnosis of the disorder. Teachers who are told that a child has ADHD may recall and interpret behavior in a way that confirms their perception of that label. There may also be a greater likelihood of improvements being overlooked or attributed to chance. The authors also described a behavior confirmation effect in which the actions of the perceiver may channel any interaction with a labeled child. Thus, when teachers approach ADHD children, certain negative reactions could induce a worse response from the child, regardless of any ADHD effects.

Cases of Possible Bias

There are several studies indicating that bias can affect perceptions of ADHD. One vivid single subject study involved multiple interventions and assessments of a 9-year-old boy (Atkins et al., 1990). In the most successful phase of the study, a daily report card and a response cost procedure were implemented. The response cost procedure involved rewarding the child with play time with a chosen peer and punishing the child by reducing play time. As reported by classroom observation, the child's improved on-task behavior was comparable to the results of stimulant intervention. His academic improvement was actually more successful than academic improvement in the stimulant intervention phase. According to teacher ratings, however, there was only slight improvement, and the stimulant condition was rated as much more successful.

Atkins et al. (1990) stated, "Although teacher ratings were useful initially to identify and describe the components of this child's behavior problems in the classroom, over time the ratings appeared unresponsive to treatment" (p. 81). On a similar note, Landau and Moore (1991) claimed that "a positive response on the part of the child may have little effect on the likelihood that teachers will interact more positively with that child" (p. 242).

Effects on Interactions

Separating the effects of behavior caused by ADHD versus the effect of the label itself is very difficult. However, several studies have found interaction effects, at least in the behavior of children. In a study by Harris, Milich, Johnston, and Hoover (1990), normal children were arranged in dyads, and one member was told that his partner would exhibit traits such as disrupting the class, talking out of turn, acting silly, and not sitting still. Results indicated that this negative (ADHD) expectation yielded less reciprocity between the children and the perceivers were less likely to attribute good characteristics to their partners. Younger perceivers were significantly less friendly and ADHD targets found the task significantly more difficult than their normal counterparts.

Weaver (1991) described a way to conceptualize the interaction of ADHD children with their environment as the Both/And Systems theory. She explained that both biological and environmental factors influence the emergence and severity of ADHD. One such factor influencing ADHD behavior may be the role that medication plays. Behaviors caused by ADHD then create reactions from the environment, which in turn affect the ADHD behaviors.

Social Cognitive Aspects of Drug Treatment

In addition to the physiological effects of stimulants, there is some evidence that drug treatments may have an effect on the social cognitions of ADHD children and their caregivers (Brancelone, 1988; Whalen & Henker, 1985).

Self-Assessment

In children, the act of taking pills at least once a day may impact their causal constructs, self-perceptions, and generalized expectancies. In an interview study involving 27 hyperactive children on stimulant medication, Henker and Whalen (1980) found that most of the children attributed their symptoms to physiological factors and expected these same factors to facilitate remediation. The children who focused on physiological attributions were unlikely to focus on personal or social factors as possible causal or remedial agents. This perception was slightly more prevalent among younger children. However when achievements were discussed in a context excluding hyperactivity and medication, children admitted the significant role of effort. When reminded of their hyperactivity, however, "several cognitive doors seem to slam shut, and the most viable options appear to be 'take a pill' or 'wait until you outgrow it'" (Henker & Whalen, 1980 p. 155).

For children working with peers on a task, investigtors reported that Ritalin reduced their intensity and positive affect, exaggerated negative affect directed inward, and did not impact communicative efficiency or social information processing. In another study, causal perceptions of medication were compared with behaviors associated with internal or external locus of control (Bugental, Whalen, & Henker, 1977). Under a self-control treatment, children did better when they had an internal locus of control or when they were unmedicated. Under a social reinforcement treatment, children did better when they had an external locus of control or when they were medicated.

Perceptions of Caregivers

Additional problems noted in Henker and Whalen's (1980) study included anxiety about social stigmatization and mixed messages from parents because of doubts and concerns about medication. Aside from reducing intensity of behaviors, medication may further affect the perceptions of observers because "however heterogeneous they (ADHD children) may have been before they were officially initiated into the category of hyperactivity (they) are now homogeneous in this important way" (Collins et al., 1980, p. 107).

Further Areas For Consideration

Peer Relations

Little has been written about the importance of peer relations for ADHD children. Most studies indicate that ADHD children have little success with peer relations (Landau & Moore, 1991; Whalen & Henker, 1985). This issue is important because of the link between early peer problems and future maladjustment (Landau & Moore, 1991). ADHD labeling may also play a role in inhibiting relationships with peers, at least through the effect they may have on a child's self concept and locus of control.

Developing a System of Treatment

A common theme found in ADHD research is the need for multivariate assessment, combined treatment programs, and cooperative efforts on the part of teachers, clinicians, and parents. However, there is a common assumption among teachers, clinicians, and parents that the responsibility lies with others. In an assessment of the social system in which ADHD children operate, Robin and Bosco (1980) reported:

> We find in the data that have been examined, little, if any, cohesiveness among the physicians, teachers, and parents in the child's life…. This disagreement seems to be centered not so much on what should be done, but on who should be responsible for doing it and who are the legitimate actors for the role behaviors…the confused, disjointed and conflicting pattern of expectations can be of little value in providing a beneficial treatment…in an environment that we feel is not inappropriately called a kenosystem. (p. 183)

One aspect of creating an orderly, cooperative system is educating teachers about ADHD. In terms of drug treatment, one study found that most special education teachers received little or no college or in-service training in drug therapy (Gadow, 1981). The two largest problems that teachers reported were lack of information and failure of physicians and parents to fulfill their role expectations.

Suggestions For Further Research

Research should attempt to assess possible bias caused by the ADHD label. Studies should investigate influences on both caregivers' perceptions of behavior and their interactions with children labeled ADHD. ADHD children's perceptions about the disorder and their role in controlling their own behavior should also be assessed. Because of the likelihood that caregivers' perceptions may affect interactions with a child, the relationship between ADHD label effects and caregivers' knowledge and experience with ADHD should also be examined.

Because of teachers' important role in children's education and development, studies should focus on identifying skills that can be used by caregivers to help ADHD children. To ensure the use of such skills, investigators must identify the type of information needed to convince teachers about the usefulness of treatment interventions. In addition, factors affecting teachers' assessments of treatments should be carefully analyzed. Finally, cooperative systems of treatment involving parents, teachers, and physicians must be developed and assessed.

References

Abikoff, H. (1991). Cognitive training in ADHD children: Less to it than meets the eye. Journal of Learning Disabilities, 24, 205-209.

Abikoff, H., Gittleman-Klein, R., & Klein, D. F. (1977). Validation of a classroom observation code for hyperactive children. *Journal of Consulting and Clinical Psychology, 45*, 772-783.

American Psychiatric Association. (1968). *Diagnostic and statistical manual of mental disorders* (2nd ed.). Washington DC: Author.

American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington DC: Author.

American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed. rev.). Washington DC: Author.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington DC: Author.

Anastopoulos, A. D., & Barkley, R. A. (1988). Biological factors in attention deficit-hyperactivity disorder. *Behavior Therapist, 11* , 47-53.

Anastopoulos, A. D., DuPaul, G. J., & Barkley, R. A. (1991). Stimulant medication and parent training therapies for attention deficit hyperactivity disorder. *Journal of Learning Disabilities, 24*, 210-218.

Atkins, M. S., & Pelham, W. E. (1992). School-Based assessment of attention deficit-hyperactivity disorder. In S. E. Shaywitz & B. A. Shaywitz (Eds.), *Attention deficit disorder comes of age: Toward the Twenty-First Century* (pp. 69-89). Austin, TX: ProEd.

Atkins, M. S., Pelham, W. E., & White, K. J. (1990). Hyperactivity and attention deficit disorders. In M. Hersen & V. Van Hasselt (Eds.), *Psychological aspects of developmental and physical disabilities.* London: Sage.

Barkley, R. A., DuPaul, G. J., & McMurray, M. B. (1990). Comprehensive evaluation of attention deficit disorder with and without hyperactivity as defined by research criteria. *Journal of Consulting and Clinical Psychology, 58,* 775-789.

Brancelone, L. (1988). *Attention-Deficit hyperactivity disorder: A step toward individualized treatment planning.* Doctoral research paper in psychology, Biola University.

Bromfield, R., Weisz, J. R., & Messer, T. (1986). Children's judgements and attributions in response to the "mentally retarded" label: A developmental approach. *Journal of Abnormal Psychology, 95*, 81-87.

Bugental, D. B., Whalen, C. K., & Henker, B. (1977). Causal attributions of hyperactive children and motivational assumptions of two behavior change approaches: Evidence for an interactionist position. *Child Development, 48*, 874-884.

Carlson, C. L., Lahey, B. B., Frame, C. L., Walker, J., & Hynd, G. W. (1987). Sociometric status of clinic-referred children with attention deficit disorders with and without hyperactivity. *Journal of Abnormal Psychology, 15*, 537-547.

Collins, B. E., Whalen, C. K. & Henker, B. (1980). Ecological and pharmacological influences on behaviors in the classroom: The hyperkinetic behavioral syndrome. In S. Salzinger, J. Antrobus, & J. Glick (Eds.), *The ecosystem of the "sick" child: Implications for classification and intervention for disturbed and mentally retarded children* (pp. 103-135). New York: Academic Press.

Critchley, D. L. (1979). The adverse influence of psychiatric diagnostic labels on the observation of child behavior. *American Journal of Orthopsychiatry, 49*, 157-160.

Darley, J. M., & Gross, P. H. (1983). A hypothesis-confirming bias in labeling effects. *Journal of Personality and Psychology, 44*, 20-33.

Denham, S.A. (1986). Social cognition, prosocial behavior, and emotion in preschoolers: Contextual validation. *Child Development, 57*, 194-201.

Devadasan, K. (1983). Diagnostic labelling in psychiatric practice. *Indian Journal of Clinical Psychology, 10,* 103-105.

Durbin, K. (1993). Attention deficit hyperactivity disorder. *Steamlined Seminar, 11,* 4.

Edelbrock, C., Costello, A. J., & Kessler, M. D. (1984). Emperical corroboration of attention deficit disorder. *Journal of the American Academy of Child Psychiatry, 23,* 285-290.

Fiske, S. T., & Taylor, S. E. (1991). *Social cognition.* New York: McGraw-Hill, Inc.

Fletcher, J. M., Morris R. D., & Francis, D. J. (1992). Methodological issues in the classification of attention-related disorders. In S. E. Shaywitz & B. A. Shaywitz (Eds.), *Attention deficit disorder comes of age: Toward the twenty-first century* (pp. 13-29). Austin, TX: ProEd.

Forness, S. R., Swanson, J. M., Cantwell, D. P., Guthrie, D., & Sena, R. (1992). Response to stimulant medication across six measures of school-related performance in children with ADHD and disruptive behavior. *Behavioral Disorders, 18,* 42-53.

Gadow, K. D. (1981). Prevalence of drug treatment for hyperactivity and other childhood behavior disorders. In K. Gadow & J. Loney (Eds.), *Psychosocial aspects of drug treatment for hyperactivity.* Boulder, CO: Westview Press, Inc.

Glow, R.A. (1981). Cross-Validity and normative data on the Conners' Parent and Teacher Rating Scales. In K. Gadow & J. Loney (Eds.), *Psychosocial aspects of drug treatment for hyperactivity.* Boulder, CO: Westview Press, Inc.

Grodzinsky, G. M., & Diamond, R. (1992). Frontal lobe functioning in boys with attention-deficit hyperactivity disorder. *Developmental Neuropsychology, 8,* 427-445.

Harris, M. J., Milich, R., Johnston, E. M., & Hoover, D. W. (1990). Effects of expectancies on children's social interactions. *Journal of Experimental Social Psychology, 26,* 1-12.

Henker, B., & Whalen, C.K. (1980). The many messages of medication: Hyperactive children's perceptions and attributions. In S. Salzinger, J. Antrobus, & J. Glick (Eds.), *The ecosystem of the "sick" child: Implications for classification and intervention for disturbed and mentally retarded children* (pp. 141-165). New York: Academic Press.

Hodgens, J. B. & Weber, M. A. (1992). *Social withdrawal and aggression in subgroups of ADHD children.* Presented at the Annual APA Convention in Washington, DC

Jussim, L. (1989). Teacher expectations: self-fulfilling prophecies, perceptual biases, and accuracy. *Journal of Personality and Social Psychology, 57,* 469-480.

Lahey, B. B., Shaughency, E. A., Hynd, G. W., Carlson, C. L., & Nieves, N. (1987). Attention deficit disorder with and without hyperactivity: Comparison of behavioral characteristics of clinic-referred children. *Journal of American Academy of Child Adolescent Psychiatry, 26,* 718-723.

Lahey, B. B., Shaughency, E. A., Strauss, C. C., & Frame, C. L. (1984). Are attention deficit disorders with and without hyperactivity similar or dissimilar disorders? *Journal of the American Academy of Child Psychiatry, 23,* 302-309.

Landau, S. & Milich, R. (1988). Social communication patterns of attention deficit disordered boys. *Journal of Abnormal Child Psychology, 16,* 69-81.

Landau, S. & Moore, L. (1991). Social skill deficits in children with attention-deficit hyperactivity disorder. *School Psychology Review, 2,* 235-251.

Milich, R., Loney, J., & Landau, S. (1982). Independent dimensions of hyperactivity and aggression: Validation with playroom observation data. *Journal of Abnormal Psychology, 91,* 183-198.

Milich, R., & Fitzgerald, G. (1985). Validation of inattention/overactivity and aggression ratings with classroom observations. *Journal of Consulting and Clinical Psychology, 53,* 139-140.

Nishiura, K., & Yamada, M. (1984). Therapeutic function of diagnostic label "hysteria." *British Journal of Medical Psychology, 57,* 91-96.

O'Leary, K. D., Pelham, W. E., Rosenbaum, A., & Price, G. H. (1976). Behavioral treatment of hyperkinetic children: An experimental evaluation of its usefulness. *Clinical Pediatrics, 15* , 510-514.

Paquin, M. J., & Jackson, D. N. (1977). Labelling effects in clinical judgements of psychopathology. *Journal of Clinical Psychology, 33,* 109-115.

Robin, S. S., & Bosco, J. J. (1980). Hyperkinesis as a pathology and as a social metaphor: Life within a kenosystem. In S. Salzinger, J. Antrobus, & J. Glick (Eds.), *The ecosystem of the "sick" child: Implications for classification and intervention for disturbed and mentally retarded children* (pp. 141-165). New York: Academic Press.

Roe, B. D., Stoodt, B. D., & Burns, P. C. (1991). *Secondary school reading instruction: The content areas.* Boston: Houghton Mifflin Company.

Rosenthal, R., & Jacobson, L. (1968). *Pygmalion in the classroom.* New York: Holt, Rhinehart, and Winston, Inc.

Shaywitz, S. E., & Shaywitz, B. A. (1992). Introduction. In S. E. Shaywitz & B. A. Shaywitz (Eds.), *Attention deficit disorder comes of age: Toward the twenty-first century* (pp. 1-13). Austin, TX: ProEd.

Ullman, R. K., & Sleator, E. K., Sprague, R. L. (1985). A change of mind: The Conners' Abbreviated Rating Scales reconsidered. *Journal of Abnormal Child Psychology, 13,* 553-565.

Weaver, C. (1991). *Alternatives in understanding and educating attention-deficit students: A systems-based whole language perspective.* NCTE Concept Paper Series.

Weisz, J. R. (1981). Effects of the "mentally retarded" label on adult judgments about child failure. *Journal of Abnormal Psychology, 90,* 371-374.

Wenar, C. W. (1990). *Developmental psychopathology: From infancy through adolescence.* New York: McGraw-Hill.

Whalen, C. K. & Henker, B. (1985). The social worlds of hyperactive (ADDH) children. *Clinical Psychology Review, 5,* 447-478.

Whalen, C. K., & Henker, B. (1992). Social impact of stimulant treatment for hyperactive children. In S.E. Shaywitz & B. A. Shaywitz (Eds.), *Attention deficit disorder come of age: Toward the twenty-first century* (pp. 323-346). Austin, TX: ProEd.

The Contributions of Hall and Münsterberg to the Study of Abnormal Behavior

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At the beginning of this century, there was little scientific knowledge about abnormal behavior. The work of a few early psychologists contributed to advancing understanding concerning psychopathology. This article examines the contributions of G. Stanley Hall and Hugo Münsterberg to the study of abnormal behavior. I describe backgrounds and historical contexts of Hall and Münsterberg. Hall facilitated the study of abnormal behavior through his writings about mental asylums and encouragement of students to study such phenomenon. Münsterberg defined psychologists' role in the treatment and conceptualization of abnormal behavior.

During the 1800s, psychology was predominantly an academic profession confined to laboratories. The 1900s began a new era for psychology, which considered an applied approach to subject matters. G. Stanley Hall and Hugo Münsterberg are prominent figures in the history of American psychology. Both men contributed a substantial amount of work to psychology during their lifetimes. Although Hall and Münsterberg wrote extensively about several psychological topics, this paper deals specifically with their contributions to the study of abnormal behavior. Moreover, this paper will review the lives and times of Hall and Münsterberg and discuss the context in which they made observations and developed theories pertaining to abnormal behavior and reflecting a new applied approach to psychology.

The theories and approaches suggested by Hall and Münsterberg may seem basic by modern psychological standards. However, both psychologists pursued interests common with those of the modern *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV*; American Psychiatric Association, 1994), a valuable diagnostic tool in the treatment of abnormal behavior. Those interests included describing the symptoms of mental disorders, understanding patients' mental states, and suggesting possible treatment programs for individuals experiencing mental illness.

The work of Hall and Münsterberg reflected the self improvement theme of the progressive movement. Each psychologist attempted to better the lives of the mentally ill through research and encouragement of the study of abnormal behavior. I conducted a literature review about the early works of both psychologists. The review revealed that both Hall and Münsterberg had substantial contributions to the early study of abnormal behavior. Hall reported on research conducted in mental hospitals, and he wrote on the role of heredity and experience in human development in his book *Adolescence.* Many of Hall's students shared his interest in mental illness. Hall used the Clark conference in 1909 to increase exposure to Freudian theory in America. Münsterberg attempted to learn about the treatment of some mental disturbances by conducting directive therapy on patients in his laboratory. Münsterberg published a book in 1909 entitled *Psychotherapy*. He used this book to report on his clinical findings and to dispel public misconceptions about the mentally disturbed. Münsterberg became an advocate for the theory that all mental illness had physiological bases. According to both Hall and Münsterberg, the psychologist had an important place in the treatment of abnormal behavior. To understand both Hall's and Münsterberg's ideas regarding abnormal behavior, a background summary for each psychologist has been prepared in the following sections.

Hall's Background

Stanley Hall was born in 1844 in Ashfield, Massachusetts.Hall's mother, Abigail Beals, was a schoolteacher and his father, Granville Bascom Hall, was a prosperous farmer. After Hall attended elementary school, he went to the Williston Academy, a school that prepared students for acceptance to distinguished universities. Hall developed skills in philosophy, theology, and history. Next, he attended Williams College and became ill with typhoid dysentery. Despite his health problems, Hall graduated from Williams in 1867 (Bringmann, Bringmann, & Early, 1992).

Hall was a student at Union Theological Seminary in 1867, and he studied abroad in Germany. After returning to the United States, he earned a PhD degree in 1878 under the supervision of William James at Harvard. Hall entitled his dissertation "Perception of Space," the first

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dissertation with a psychological theme written in America. Hall returned to Europe after obtaining his PhD. He studied at the University of Berlin before attending the University of Leipzig. While at Leipzig, Hall studied under Wilhelm Wundt. Hall was influenced by other prominent figures in psychology's history such as Fechner, Helmholtz, and Weber. Hall did post graduate work in Germany until he returned to America in 1880.

Hall began his famous academic career at Johns Hopkins University. While at Johns Hopkins, he established a psychology laboratory and published the first American psychology journal, *American Journal of Psychology*. Hall became president of Clark University in 1888, and during his time at the university, he founded a laboratory for research in psychology. He also established and edited two more psychology journals. In 1892 Hall was the chief force in creating the American Psychological Association, and he was the Association's first president. Hall's contributions and writings on subjects in psychology were unsurpassed by early psychologists. Of Hall's significance to American Psychology, Averill (1982) said "… he turned his genius into the exploration of every human area and relationship: genetics, childhood, adolescence, family, aberration and religious phenomenon" (p. 341).

Münsterberg's Background

During the year 1863, Hugo Münsterberg was born in Danzig Prussia. Although Danzig was destroyed in World War II, the city was known as the Venice of the North in the last part of the 19th century. Some of Münsterberg's early interests included the cello, poetry, archeology, Greek, and Arabic (Moskowitz, 1977). Münsterberg's father was a wealthy merchant, and his mother was a well-known artist. After Münsterberg's mother died when he was only 12 years old, he became a serious scholar and reader (Hothersall, 1972).

Although Münsterberg was originally attracted to psychology, he attended the University of Leipzig in 1882 as a medical student. He was lured back to psychology after attending several lectures by Wilhelm Wundt (Moskowitz, 1977). Like Hall, Münsterberg also studied psychology under Wundt. Although Wundt and Münsterberg disagreed on some issues, Münsterberg received a PhD degree in 1885 after studying with Wilhelm Wundt. Münsterberg also acquired a medical degree in 1887 from Heidelberg, and he believed that both degrees were beneficial in a career dealing with the applied sciences (Hothersall, 1972).

Münsterberg's works, including the "Activity of the Will" and his series entitled "Contributions to Experimental Psychology," were publicly criticized by Wundt. However, both works found favor with American psychologist William James (Moskowitz, 1977). Even though James was the head of psychology at Harvard University, he did not care for laboratory research. Therefore, he sought someone to supervise Harvard's psychology laboratory.

There were at least two reasons James approved of Münsterberg as head of Harvard's psychology laboratory. The first was that James looked favorably on some of Münsterberg's theories.Münsterberg's work in motor capacities supported part of James' work regarding emotion, (Moskowitz, 1977). Another reason was that both James and Münsterberg considered themselves philosophers as well as psychologists (Landy, 1992).

In 1892, James offered Münsterberg the position of supervisor at Harvard's psychology laboratory. Münsterberg eventually accepted, although he did so with hesitation. He knew that he would greatly miss Germany. Even after several years in America, Münsterberg did not consider himself an American, and he remained loyal to his homeland. His great love for Germany turned the American public against him and cost him a suitable position in the history of psychology (Moskowitz, 1977).

Before World War I, Münsterberg enjoyed great fame in America and wrote on several topics in psychology. He also wrote books discussing philosophy and the differences between American and German cultures. Münsterberg was gifted at writing for lay audiences. He published numerous journal and newspaper articles, and also wrote four books in German and over 20 books in English (Moskowitz, 1977). Münsterberg was elected president of the American Psychological Association in 1908.

For several years, Münsterberg served as an "ambassador" for the good relations between Germany and America. Münsterberg dined with Theodore Roosevelt in Washington DC, and he received an invitation to meet with the Kaiser in Berlin. Harvard University appointed him exchange professor to the University of Berlin. His duty at the university was to establish an institute in which both American and German students could study the scholarly works from each country (Moskowitz, 1977).

As tensions between Germany and America grew,

Münsterberg attempted to write and defend Germany's position in the midst of high levels of anti-German propaganda. Because of his unpopular ideas, many Americans viewed him as "… an agent of the German government" (Landy, 1992, p. 795). Münsterberg remained unpopular until his death in 1916. He was disliked because of his image as a German spy or sympathizer. His poor reputation contributed to psychologists' disregard for much of Münsterberg's work (Moskowitz, 1977). The controversy about the significance of Münsterberg's contributions to psychology continued into the 1970s (Kuna, 1978; Roback, 1978).

To recognize the significance of Hall and Münsterberg's contributions to abnormal behavior, one should understand the historical era in which they lived. This point is discussed in the following section.

Historical Context
The 1890s to World War I

At the turn of the century, the two dominant schools in psychology were structuralism and functionalism. Structuralism dealt with general rules for the mind based on techniques of self-report and introspection. Functionalism was completely at odds with structuralism, and it concerned itself primarily with how the individual interacted with his or her environment. The functionalist movement, which was strong in the United States, helped lead the way for the development of applied psychology.

The history of modern psychology began with the founding of the American Psychological Association in 1892 (Leahey, 1978). Leahey also considers American psychology as modern psychology because the United States was the first country to establish psychology as a legitimate profession.

The period from 1890 through the beginning of World War I was a dynamic era in America's history. Psychology was greatly affected by events during this time period. During the last decade of the 19th century, most Americans lived in small towns and villages. People were isolated from the outside world and its developments. Most Americans only experienced contact with close family and neighbors.

In 1880, 25% of the United States lived in cities; by 1900, the figure rose to 40% (Leahey, 1978). America demographics began to change rapidly with the introduction of technology and urbanization at the turn of the century. Because of the industrial revolution in America, people moved to cities to find jobs.

Most immigrants settled in American cities. People with diverse backgrounds were living in one area. The population of cities caused people to stretch their perspectives, experience steady change and reduce gaps in personal experience (Leahey, 1978). Large populations and diverse people brought new problems to American society.

A new movement in thinking, progressivism, began to sweep the country. Pioneered by John Dewey in 1896, the progressive movement represented change and reform. Leahey (1978) characterized the 1890s as the age of "news," referring to new education, new ethics, the new women, and the like. Education was an important component of the progressive era. Hall contributed to the education movement with his studies on children and his emphasis on student-centered education (Leahey, 1978).

Psychology, as well as the other social sciences, was influenced by the changes occurring in America. People were ready to work for the betterment of society through the individual, as progressive thought suggested. Many psychologists, including Hall and Münsterberg, believed principles of psychology could be put to use in an urban setting. They hoped that psychologists could help solve society's problems. Applied psychology began in response to the context of the early 1900s. Rather than working exclusively in a laboratory setting, some psychologists started to work in a new setting—society—and they began to reshape business, education, and ideas concerning mental health.

One of the many areas explored during the revolution of applied psychology was abnormal behavior and mental illness. There was considerable lack of knowledge regarding abnormal behavior at the turn of the century. Hall and Münsterberg supported the contention of the era that concluded that both organic and psychological factors play a role in mental illness. Both men seemed to regard minor forms of mental illness as more responsive to treatment (Hall, 1904; Münsterberg, 1909). For example, Münsterberg did not treat patients exhibiting severe psychoses because they were unresponsive to suggestion (Moskowitz, 1977). Through experiments, observation, and education, Münsterberg and Hall attempted to facilitate better understanding about mental illness. Their goal reflected the progressive theme of self-improvement. Hall and Münsterberg made several specific contributions to understanding abnormal behavior.

Hall's Contributions to Abnormal Psychology

Hall contributed to the study of abnormal behavior in two major ways. First, he developed some of his own theories about mental illness and mental health as he worked through his theories about human development. Second, Hall greatly encouraged the study of mental disturbances in the United States. Inviting Freud to Clark University to speak about psychoanalysis was one way he encouraged such study. Hall encouraged his students to pursue the field of abnormal psychology, and he wrote extensively on the usefulness of asylums in the study of mental illness.

For Hall the study of children was the basis for his genetic psychology. Genetic psychology concerned itself with human development from infancy to old age. Psychopathology was included in these developmental stages. Hall published *Adolescence* in 1904, and he described his theories about human development. Hall proposed that in the normal course of maturing an individual could sublimate socially unacceptable feelings. He believed anxiety arose when, "… sexuality was excessively or abnormally frustrated or restrained" (Hall, 1904, p. 285). However, Hall acknowledged that repressed feelings in childhood could show up again in later stages. Hall viewed mental illnesses such as suicidal depression as stemming from either environmental causes or hereditary weakness. Negative environmental experience or heredity could cause psychopathology throughout adulthood.

Hall (1904) claimed that almost every form of mental illness, if not apparent before adolescence, began to manifest itself at this age. He defined psychopathology as disturbances in normal functioning, overgrown and childish impulses, a weak ego, sexual malfunction, and negative experiences that disrupted regular functioning (Ross, 1972).

Hall readily acknowledged the existence of a subconscious or unconscious. He theorized that the "psyche" consisted of one layer built on top of another (Ross, 1972). Each developmental layer structured itself on the previous one. Hall believed that the unconscious was quite powerful, but he never formulated theories about how the unconscious functioned. Hall did not have a model for the subconscious, but Münsterberg developed a two part model consisting of a "reservoir" and a "workshop," both of which were beyond conscious control. Münsterberg's model was consistent with his physiological theory of subconscious functioning. Hall was much more vague regarding his ideas on the subconscious. He was content with a loose interpretation about the subconscious and never developed a model beyond that of developmental layers. According to Watson and Evans (1991), such an interpretation was characteristic of Hall because he often did not carry his ideas past their formative stages.

Many of Hall's ideas reflected Freud's theories. For instance, Hall (1904) theorized that repression was unhealthy for the developmental layers of the subconscious. He watched Freud's career carefully and with much interest. For Clark University's 20th anniversary, Hall invited Freud to come to America and share his ideas. Hall's invitation to Freud to lecture on psychoanalysis represented one of the ways Hall encouraged the study of mental illness. Freud was well-received in America with many publications giving him positive reviews. According to Evans and Koelsch (1985), the meeting at Clark University introduced and promoted Freudian psychoanalysis in America.

Hall had several students who studied mental functioning because of his encouragement. Averill (1982) wrote about his former teacher, "… I have profited for a long lifetime from my commitment to the analysis of the human mind by the example and encouragement of G. Stanley Hall" (p. 346). When Averill obtained his PhD under Hall in 1915, the study of mental illness was restricted to mental institutions. Hall set out to change that situation. He particularly wanted students to study and learn about mental illness, thus, he arranged for scholars to visit the Worchester State Hospital. Under the guidance of Hall and the director of the asylum, students reviewed case studies and case histories, as well as observed assorted types of mental illness. Averill (1982) admitted that observing mental patients was a revolutionary event. Outside of Clark University, few graduate schools were familiar with psychiatry. Two famous psychologists who studied under Hall were Henry Goddard, who conducted the well-known studies on "feeble-mindedness," and Lewis Terman, who was a prominent leader in mental testing test at Stanford University (Watson, 1964).

Among his early articles published in *The American Journal of Insanity*, Hall (1896) reiterated the importance of mental institutions for learning about various mental diseases. He asserted that all departments of psychology should teach students about psychiatry, and he further criticized schools and universities for not using mental asylums to teach and gain insight about mental illness. Hall declared that medical schools should offer more courses on mental illness.

Hall gave high amounts of praise to August Hoch, MD for establishing a research and observation laboratory in McLean Hospital, a mental institution (Hall, 1895). Hall described laboratory investigations into blood changes and variations in sleep in relation to mental disease. As an advocate for the study of abnormal behavior, Hall claimed that research laboratories in mental asylums would lead to more accurate diagnosis of patients and greater knowledge about mental disturbances.

Münsterberg's Contributions to Abnormal Psychology

Like Hall, Münsterberg was interested in the accurate diagnosis and treatment of abnormal behavior. Münsterberg contributed to the study of abnormal behavior by developing his own theories and by publishing *Psychotherapy*. Münsterberg added to the understanding of abnormal behavior in an applied manner by experimenting with therapy for disturbed patients.

Münsterberg chose a directive approach to counseling patients. In this approach, Münsterberg sought to influence his patients with his own will. The procedure used direct suggestion, auto suggestion, and emphasis that the patient would get better. Münsterberg allowed his patients to lie on a lounge during therapy, and he used hypnosis to increase patients' suggestibility. Münsterberg made his diagnosis based on the patient's behavior, an interview with the patient, and responses the patient gave to a word association test (Hothersall, 1972).

Münsterberg developed two classes for mental disturbance: those based on external bodily factors and those due to a malfunctioning nervous system (Moskowitz, 1977). The first class of disturbance, external factors, indicated that the central nervous system was essentially healthy. The problem was that extraneous factors such as blindness, deafness, pain, grief, thyroid deficiency, severe emotional trauma, or lack of education were impeding proper functioning. The second class of disturbance was because of improper functioning of the nervous system and could include inherited tendencies toward phobias, paranoia, and depression (Moskowitz, 1977).

In his book about psychotherapy, Münsterberg described abnormal behavior as a problem occurring because of instability in the individual's functioning mechanism. A person with symptoms of abnormal behavior could not, "… adjust the activities to the surroundings" (Münsterberg, 1909, p. 160).

Münsterberg (1909) used the example of a facial caricature to explain mental disease. In a caricature, certain common features such as the nose and mouth are either exaggerated or minimized. Mental illness was a distortion of normal mental functioning. Münsterberg claimed mental illness developed when some mental processes were too extreme, although other mental processes were too minimal. The emotion of a depressive person is common to all people, but behavior becomes abnormal when normal emotions are extreme or exaggerated.

In *Psychotherapy*, Münsterberg (1909) claimed he had experienced success with his clinical methods. Patients exhibiting alcoholism, hallucinations, obsessions, and phobias were often relieved of symptoms. He even claimed to have treated, by mail, an individual from Seattle who could not look people in the eye because of a past experience.

Münsterberg also used *Psychotherapy* to dispel some of the myths surrounding mental illness, (Hothersall, 1972). Münsterberg proclaimed the benefits of psychotherapy, but also warned about its limitations.

Münsterberg (1909) defined psychotherapy as a method for treating illness by influencing the mind. He believed that psychotherapy went along with the practices of the medical profession, which attempted to treat illness by influencing the body with medications, diet, and so forth. Moskowitz (1977) proclaimed Münsterberg's *Psychotherapy*, "… an effective presentation of the applications of psychology to medicine" (p. 830).

Münsterberg (1909) focused much of his attention on the subconscious, stating that a subconscious did not exist. However, that statement should not be taken literally. Münsterberg denied the subconscious existed when it was defined unscientifically. In a symposium entitled "Subconscious Phenomenon" and edited by Morton Prince for *The Journal of Abnormal Psychology*, Münsterberg et al. (1910) maintained that the subconscious must be defined in biological terms because psychological definitions should not be based in mystic, undefined terminology.

In Chapter One of *Subconscious Phenomenon (*Münsterberg et al., 1910), Münsterberg outlined a two part model for the subconscious. The first part was the "reservoir," which holds subconscious ideas, and the second was the "workshop," which takes the dissociated thoughts and actions of the subconscious and associates them in a way the consciousness can understand. Neither

the "reservoir" nor the "workshop" was under conscious control. Although we could not control our subconscious actions, Münsterberg believed there were physiological or mental processes underlying their functioning.

Münsterberg disagreed with several theories about the subconscious (Münsterberg, 1909; Münsterberg et al., 1910). He believed that the subconscious was not a function of abnormal behavior. "Awareness" was a necessary characteristic of what is conscious. With "awareness" as a necessary condition for consciousness, the implication was that only physiological processes were outside of conscious experience. Münsterberg asserted that a patient exhibiting hysteria is not dealing with subconscious repercussions but a neurological opening to past conscious experience. Therefore, abnormal behavior is related to conscious experience, and "no subconscious emotion is responsible for the mischief carried out" (p. 148).

Münsterberg also disagreed with the notion that the subconscious was some type of separate personality or entity. He did not favor Freud's concept of the subconscious, which was based on memory suppression (Münsterberg, 1909; Münsterberg et al., 1910). Münsterberg was more likely than Hall to object to Freud's theories about mental disturbances, but he did recognize Freud's theory concerning the traumatic origins of some neurotic disorders. However, Münsterberg disagreed, for most of his career, with Freud's ideas about repressed memories in favor of his own physiological explanation (Moskowitz, 1977).Münsterberg believed the subconscious consisted of "… not the impressions remaining in the mind but the disposition of physiological centers" (Münsterberg, 1922, p. 390). Although Hall and Münsterberg differed in some of their ideas, both psychologists promoted psychological knowledge about abnormal behavior.

Conclusion

On the basis of my research, I have concluded that Hall and Münsterberg contributed to psychology's role in the understanding of abnormal behavior. Hall facilitated psychology's role in the treatment of abnormal behavior by inviting Freud, Jung, and other psychoanalysts to Clark University in 1909. Hall's role in the creation and management of the Clark conference expedited the transmission of psychoanalytic ideas about abnormal behavior to the American public and professionals. Hall was also instrumental in recommending the study of mental illness in mental asylums. He used mental institutions for his graduate students to observe and study abnormal behavior and praised research efforts of individuals working in asylum laboratories.

Münsterberg had specific theories and practices of his own for treating abnormal behavior. Moreover, Moskowitz (1977) pointed out that Münsterberg's writings on the topic of psychoanalysis assisted in the growth of the field of abnormal psychology. Münsterberg had revolutionary ideas regarding psychology's role in the treatment of abnormal behavior. The study and treatment of abnormal behavior was confined to the medical field. Because Münsterberg had both a medical degree and a doctoral degree in psychology, he could effectively argue psychology's place in the management of mental illness. Münsterberg's *Psychotherapy* was a multidimensional perspective in the early years of abnormal psychology. Münsterberg integrated medicine and psychology in his approach to therapy by insisting that all abnormal behavior had a physiological basis. By demanding that psychological phenomenon be defined biologically, Münsterberg contributed to psychology's credibility for studying abnormal behavior.

Both Hall and Münsterberg assisted in making mental illness a legitimate and main stream topic of study for psychology. Their perspectives and practices regarding the origins and treatment of mental illness served as a cornerstone to the emerging mental health profession.

Many of Hall's and Münsterberg's ideas have merit today. For instance, both writers asserted that abnormal behavior can be traced to environmental and hereditary factors. Hall would not lack support for his advocacy for studying mental illness by using patients in mental facilities. Moreover, Münsterberg would find many modern psychologists supportive of his contention that all mental disturbances and mental activity had physiological bases. The work of both psychologists embodied the goals of the modern *DSM-IV* regarding proper treatment, understanding, and diagnosis of mental disease.

At the turn of the 20th century, the zeitgeist was the progressive movement. Social scientists emphasized developing techniques for improving the individual. Some psychologists were interested in applying the discipline's principles to society's problems. G. Stanley Hall and Hugo Münsterberg made early contributions with long term implications for the understanding and treatment of abnormal behavior.

References

American Psychiatric Association. (1994). *Diagnostic*

and statistical manual of mental disorders (4th ed.). Washington DC: Author.

Averill, L. (1982). Recollections of Clark's G. Stanley Hall. *Journal of the History of the Behavioral Sciences, 18,* 341-346.

Bringmann, W., Bringmann M., & Early, C. (1992). G. Stanley Hall and the history of psychology. *American Psychologist, 47,* 281-289.

Evans, R. B., & Koelsch, W. A. (1985). Psychoanalysis arrives in America: The 1909 conference at Clark University. *American Psychologist, 40,* 942-948.

Hall, G. S. (1904). *Adolescence.* New York: D. Appleton and Company.

Hall, G. S. (1895). Laboratory of the McLean Hospital, Somerille, Mass. *The American Journal of Insanity, 51,* 358-364.

Hall, G. S. (1896). Psychology education. *The American Journal of Insanity, 53,* 228-241.

Hothersall, D. (1972). *The history of psychology*. Philadelphia: Temple University Press.

Kuna, D. (1978). One-sided portrayal of Münsterberg. *American Psychologist, 28,* 849-850.

Landy, F. (1992). Hugo Münsterberg: Victim or visionary? *Journal of Applied Psychology, 77*, 787-802.

Leahey T. H. (1978). *A history of modern psychology.* Englewood Cliffs, NJ: Simon & Schuster.

Moskowitz, M. J. (1977). Hugo Münsterberg: A study in the history of applied psychology. *American Psychologist, 32,* 824-884.

Münsterberg, H. (1909). *Psychotherapy.* New York: Moffat, Yard and Company.

Münsterberg, H., Ribot, T., Janet, P., Jastrow, J., Bernard, H., & Prince, M. (1910). *Subconscious phenomenon.* Boston: Gordam Press.

Münsterberg, M. (1922). *Hugo Münsterberg: His life and his work.* New York: Appleton.

Roback, H. (1978). More on Münsterberg. *American Psychologist, 28,* 849-850.

Ross, D. (1972). *G. Stanley Hall: The psychologist as prophet.* Chicago: The University of Chicago Press.

Watson, R. I. (1964). *The great psychologists from Aristotle to Freud.* New York: J. B. Lippincott Company.

Watson, R. I., & Evans, R. B. (1991). *The great psychologists: A history of psychological thought* (Rev. ed.). New York: Harper Collins.

A Practical Guide to Conducting the Dreaded Literature Review

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There are six million stories in the naked city, many ways to skin a cat, lots of monkeys in a barrel, two birds to be killed with a single stone, pennies to be saved and earned, and because misery loves company, countless ways to approach the dreaded literature review. In this special feature article, undergraduate students provide words of advice and warning for combating APA style, setting goals and deadlines, using descriptors, using interlibrary loan, cruising the Internet, and actually reading journals.

Marcie M. Cutsinger

Picture this. During your first day in a social psychology class, the teacher hands out the syllabus. As you scan the syllabus, you realize you will have to do a literature review, and you think to yourself, "That won't be too bad."

You look up and realize the teacher is handing out what you think could be an extra textbook for the class. When this sheaf of papers reaches your hands, you find that the title is "Literature Review Grading Criteria." Your heart sinks, and you now know that you are doomed. There is no way that there could be so many rules to write one paper. Not only does the teacher proceed to tell you that this tome is a guideline for your paper, but she also says that she will spend at least the next week explaining what she wants for the review paper. In other words, she will be explaining APA style.

To make matters worse the teacher holds up a truly ponderous volume entitled *Publication Manual of the American Psychological Association* (APA, 1994) and explains that the first set of papers she handed out simply highlights this book.

When you finally pick up your chin from the floor and put your eyeballs back into your head, you realize your first task is to pick a topic to review. After you pick a topic, things just flow: you find your resources; you do some reading; you do some more reading; you summarize and organize your articles, which of course requires more reading, and then you write a rough draft.

Just as you think you are on the downhill slide, you realize that the extra textbook comes into play. Now you are ready to edit! Not only do you have to do citations a certain way, but you also have to do a title page (with a running head), an abstract, and references all according to this new book. This book has rules that range from the sublime to the ridiculous, including guidelines for using non-sexist language and proper margins.

When at last you think your final draft is finished and you have emptied the trash can next to your computer at least 10 times because of all the rough drafts you had to redo, you can relax. Relax, that is, until you start another APA style paper for another psychology class. Just a word of comfort! After your first such paper, APA format is not bad at all and is actually helpful in producing a well-written paper.

Moral: It feels so good when it is over that some people actually climb back up and slide down that mountain again.

Erick Dragsten

The process of researching and writing a literature review is not unlike having a tooth pulled: one is tempted to put off both until the last minute, and both can be very painful. What with organizing, researching, finding out what a professor wants, writing, revising, and finally turning in a finished product, no wonder few students feel

This is a special features article contributed to by students who responded to an open invitation to describe experiences with or perspectives about conducting a literature review. Determination of authorship order was by topic.

compelled to tackle the project immediately. Each step in this process requires time and attention. Slacking off on any part will detract from the paper's quality and grade.

Literature reviews require a thorough job of research and preparation long before the due date. Avoid last minute attempts. The least painful way to undertake a literature review is to develop some sort of idea about what you want to investigate. However, do not form concrete plans. Allow for flexibility because new insights might lead to more interesting topics than that originally selected.

The best way to start the literature review is to set a date for producing the bibliography. Make sure this date is three to four weeks before the due date, and reward yourself for meeting that deadline by partaking of your favorite treat (see Skinner, 1951). When you have completed the literature review, the rest of the project is much less painful. Even writing the paper is easier when one studies and understands the demon that is APA style
.

Writing in APA style, which is shorthand for **A** **P**ainstakingly **A**nal style, is never easy. To make matters worse, many professors have their own interpretations of APA requirements. No matter how carefully you read the APA manual, you can never live up to a professor's standards. Therefore, if possible, one should always turn in a rough draft of the paper to get a feel for what a particular professor wants. In addition, if a psychology department offers any type of summary handout about APA requirements, borrow, purchase, or even steal such a handout because it can be a lifesaver. Not only will it present information in a comprehensible manner, unlike the APA manual itself, but it will give you a feel for what professors in a particular department believe to be important. You can defeat the APA monster in a rather uncomplicated manner if you take the proper steps.

Because writing literature reviews is an integral part of being a psychology major, these projects can cause you to consider changing majors. However, if you take the time and do not procrastinate, these papers can turn into a labor of love. OK, maybe not real love, but not loathing either. The key is getting started on a timely basis.

Moral: I think I'll stop procrastinating tomorrow, maybe.

Heather Sabo

When conducting a literature review, finding sufficient information can sometimes be difficult. Anticipate that your college library will not contain all the books or journals that you need. Narrowing your topic to the holdings in your library may damage the quality of your paper and leave out useful information. Interlibrary loan has proven to be my friend, but you must start the process well in advance of the paper's deadline. Information that comes two days before the deadline is difficult to read and incorporate into a review paper. Even more discouraging is receiving articles or books after the deadline and finding out what you omitted from your paper. Interlibrary loan is relatively inexpensive and can supply a cornucopia of information that will make writing a literature review less of a nightmare.

Moral: Seek help and you shall find it—even at the library.

Megan Hobday

From experience, I have found that the most important piece of information for a PsycLIT search is the language in which the article is written. I was searching for information about facial perception in infancy and discovered a study about hemispheric separation. I printed the information and proceeded to tell my professor that I had chosen this topic. As I ordered the article through interlibrary loan, I realized that the article was not written in English. As a matter of fact, there were no articles in English on my topic. Explaining why I needed to change my topic was a little embarrassing, but in the end I learned that procrastination and French do not mix.

Moral: C'est une parle que ce example de les nonsense.

Terry Waugh

I took a psychology class that required me to write a literature review. This assignment was somewhat of a surprise to me because the syllabus had not mentioned the assignment. The timing could not have been worse. When I tried to write about the topic, I simply drew a blank. Because I was very busy with my other classes, I did not know where I would find the time to do this assignment. But then I had an idea—not really an original idea I found out later. Because I had written a literature review two years earlier, I decided I could just revise and resubmit it. I reasoned that such behavior was not plagiarism because the work was my own.

My review had not really impressed anyone the first time, and I figured it would not impress anyone the second time. I simply hoped that the review would fulfill the requirement for the assignment.

After I submitted the revised literature review, my professor called me to his office and informed me that he had selected my literature review as one that should be presented at an upcoming conference. Another professor had discussed this review with him, and it impressed him so much that he made a copy of the review and kept it.

This experience is possibly the most embarrassing and stressful shortcut I have ever taken. Doing another review or not doing one at all would have been less stressful. I am now using my energy to find a way to get out of this situation.

Moral: Those who ignore the past are condemned to repeat it and will be re-graded.

Ray Tabios

There is nothing more frustrating than to struggle with scientific or psychological jargon. The very first thing to do when trying to conduct a literature review is to find one book or article that gives a basic explanation about the topic. Literature designed for the layperson will often include definitions of such terminology. In addition, when one familiarizes oneself with generalities about a topic, the understanding of those pesky peculiarities may, in the long run, help in completing the literature review.

Comprehension is only half of the task. In a day and age when computers can access almost any information one wishes to find, most investigators start with a computer search. Searching the Internet before going to the library helps me. Netscape and E-mail are resources for getting answers to one's questions about a topic. On one occasion, I needed to find some leads on literature about the physics of driving and related automotive engineering topics. I used E-mail to post a message on one group's bulletin board. In three days, I received several replies that were very helpful. With the information I obtained from those replies, I knew the names, titles, and descriptors to use with the library's computer. I found what I needed to know.

Moral: With the appropriate technology and contacts, one can find almost anything about anything.

Rhonda Smith

When doing a computer search, one must be focused and yet keep an open mind. My computer search took me almost two hours. The reason the search took so long was because I could not narrow my topic to just a few key words. After deciding on the key words, I stuck to them as if they were gospel. The information that the computer provided was close to, but not exactly, what I wanted. Because I kept running up against a brick wall, I took a break. When I returned, the solution was obvious, and I found the information I was seeking.

Moral: Mental set is alive and well, even in the computer age.

Rhonda Smith

I needed to find a journal article from *Scientific American.* I knew that the article appeared between July, 1994 and September, 1995. I did not know the title. Because the computer search proved unsuccessful, I asked a reference librarian for help. Our combined efforts also proved unsuccessful. Determined to find the article, I examined the table of contents for the September 1995 issue and proceeded to inspect previous issues. I finally found the desired article and a few others that I would not have found otherwise. Computers are nice, but sometimes you are better off doing a search the hard way.

Moral: Sometimes there is no way to avoid actually reading the material.

References

American Psychological Association. (1994). *Publication Manual of the American Psychological Association* (4th ed.). Washington, DC: Author.

Skinner, B. F. (1951). How to teach animals. *Scientific American, 185,* 26-29.