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Special Features

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The following individuals reviewed manuscripts for this volume of the *Journal of Psychological Inquiry*. We gratefully acknowledge their valuable contributions to the journal.

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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

Acknowledgement - Psychology Students

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

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

1. Manuscripts must have an undergraduate as the primary author. Manuscripts by graduates will be accepted if the work was completed as an undergraduate. Graduate students or faculty may be co-authors if their role was one of teacher or mentor versus full fledged collaborator.

2. Manuscripts must (a) have come from students at institutions sponsoring the Great Plains Students' Psychology Convention and the *Journal of Psychological Inquiry* or (b) have been accepted for or presented at the meeting of the Great Plains Students' Psychology Convention, the Association for Psychological and Educational Research in Kansas, the Nebraska Psychological Society, or the Arkansas Symposium for Psychology Students. The preceding conditions do not apply to manuscripts for the Special Features section.

3. Send original manuscripts only. Do not send manuscripts that have been accepted for publication or that have been published elsewhere.

4. All manuscripts should be formatted in accordance with the APA manual (latest edition).

5. Empirical studies should not exceed 15 double-spaced pages; literature reviews or historical papers should not exceed 20 double-spaced pages. The number of pages excludes the title page, abstract, references, figures, and tables. We expect a high level of sophistication for literature reviews and historical papers.

6. The *Journal* requires five (5) copies of the manuscript in near letter quality condition using 12 point font. Faded or poor quality printing may be grounds for returning materials without review.

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2/99

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Effects of Extraversion and Introversion on Job Interview Success

Kelli J. Sheets
Harding University

The study investigated whether an applicant's extraverted or introverted behavior effected job interview success. Two groups of students (N = 58) watched a videotape with an applicant exhibiting either extraversion or introversion and completed several questions using a Likert scale. There was a statistically significant difference between the two groups, F (1, 57) = 6.481, p = .014, and an interaction between the two groups and the students' gender, F (1, 57) = 4.818, p = .032. Overall, students were more likely to hire extraverted applicants. Whereas men were more likely to hire the extravert, women showed no preference. The discussion includes implications for interviewees and interviewers. Future research should examine personality characteristics of judges and explore the role of the type of occupation.

The interview is a crucial part of the selection process for employees and graduate students. Employers use interviews to form an impression about possible employees and to determine whether they would be positive additions to their companies. Written applications can reveal only a limited amount about a person; they do not show the personality or character of a person. The interview can be an important technique for gaining additional information. Investigators have conducted many studies to determine what interviewer and applicant characteristics contributed to successful and unsuccessful interview.

The interviewer influenced the applicant with his or her behavior in a study conducted by Liden, Martin, and Parsons (1993). The interviewer had a warm disposition, meaning that he or she smiled and made eye contact with the applicant; he or she positively affected the applicant. The interviewer negatively affected the applicant when the interviewer had a cold disposition, meaning no smiling nor eye contact.

The interviewer's mood can also influence the applicant. Baron (1993) found that if the applicant had the required job qualities, the interviewer was more likely to enhance his or her mood, whether it be positive or negative, by leading the interview into an enjoyable social interaction. The enjoyable interaction and the enhancement of his or her mood led the interviewer to give the applicant a positive rating. However, if the applicant appeared unqualified, the interviewer with a positive mood did not have the desire to start an enjoyable interaction with the applicant. Instead, the interviewer saw the applicant as a threat to his or her mood and gave the applicant a low rating. When the interviewer had a negative mood, there was no stimulation to keep his or her mood intact, and there was no threat and no reason to punish the unqualified applicant with a low rating. Therefore, the interviewer's mood significantly influenced the applicant's rating if he or she was not qualified for the job.

Nonverbal communication can also be critical during interviews. Wright and Multon (1995) said that disabled people who had good nonverbal communication were more likely to be employed after an interview than those who had bad nonverbal communication. Anderson (1991) found the nonverbal communication of eye contact during an interview influenced judgments about the applicant's personality. The participants in that study associated the applicant's nonverbal behavior with his or her competence and character strength. Similarly, Howard and Ferris (1996) discovered that the nonverbal behaviors of the applicant, such as smiling, nodding, and making eye contact, influenced the interviewer's perception of the applicant's capabilities. Gifford, Fan Ng, and Wilkinson (1985) found that interviewers used the applicant's nonverbal communication to presume social skill.

Besides nonverbal communication, impression management techniques can determine interview success. Kacmar, Delery, and Ferris (1992) examined whether applicants who used the self-focused impression management technique were more successful in interviews than those who used the other-focused impression management technique. Self-focused impression management attempts placed emphasis on characteristics that make the applicant look good, whereas the other-focused technique emphasized the interviewer. Kacmar, et al. (1992) found that those who used the self-focused type were more likely to receive job offers. Gilmore and Ferris (1989) discovered that any impression management tech-

Kenneth L. Hobby from Harding University was faculty sponsor for this research project.

nique used by applicants made interviewers more inclined to hire them. Impression techniques impacted the interviewers' judgments because they encouraged applicants to emphasize their positive traits, agree with the interviewer, and claim responsibility for their accomplishments.

More important to the current study is the research on the role of the applicant's personality and behavior on interview success. Tullar (1989) found that applicants who dominated conversations were more successful than those who did not dominate conversations. Van-Vianen and Van-Schie (1995) discovered that when a woman behaved in a more masculine way in an interview she was more likely to be hired. Stone and Winfrey's study (1994) said that applicants' behaviors, along with the length of the interview and the strategy of the interview, affected perceptions of their qualifications. The authors also found the applicants' behaviors, more than their qualifications, impacted ratings. Parsons and Liden's study (1984), consisting of interviewers rating applicants in specific areas after participation in an interview, concluded that speech characteristics were more important than personal appearances in an applicant's hireability.

I found no studies that reported on the role of extraversion and introversion on job interview success. A related study conducted by Iizuka (1992) found that extraverts gazed more frequently and longer than introverts in an interview situation. Extraverts also gazed more frequently and longer while listening, but there was no significant difference between extraverts and introverts while speaking. Those who participated in the experiment as applicants completed a questionnaire after the experiment, and the results indicated that during the interview extraverts were more relaxed and calm than introverts.

The current study tried to discover whether extraversion or introversion is an advantage in an interview situation. The results of the study may help persons preparing for interviews by showing them what is and what is not successful behavior. Previous research has shown that applicants who are dominant in interviews are more successful than those who are submissive (Tullar, 1989). Therefore, I hypothesized that extraverts were more likely to be hired than introverts because of their outgoing and personable behavior.

Method

Participants

Fifty-eight college students in two upper-level business courses participated. Of the 58 participants, 28 were women and 30 were men. They were divided into two groups; the extraversion group contained 28 participants, and the introversion group contained 30 participants. Students participated at the request of their professors and the experimenter. Participation was voluntary.

Materials

The same male interviewer and female applicant conducted two interviews on separate videotapes. The interviewer asked questions picked from those most commonly used in entry-level interviews, and the applicant answered with the same words in both videos. See Appendix A for the complete interview. The applicant wore the same outfit and had the same qualifications in both interviews, but she exhibited extraversion in one interview and introversion in the other. The Myers-Briggs Type Indicator Manual (Myers & McCaulley, 1985) gave the definitions for extraversion and introversion, which were the basis for the applicant's mannerisms in each interview. As an extravert, the applicant spoke with more confidence, had straighter posture, and responded to the energy of the interviewer. As an introvert, the applicant spoke softly, sat low in her seat, and did not respond outwardly to the interviewer's energy.

A questionnaire consisting of four Likert scale questions also asked for participants' gender, classification, and major. The questions asked participants' opinions about the applicant's ability to succeed at the job for which she was interviewing and whether he or she would hire the applicant. See Appendix B. The scale ranged from 1 to 5; 1 represented the most negative response and 5 represented the most positive response.

Design and Procedure

The two independent variables were the gender of the participants and the applicant's display of extraversion or introversion. Participants' responses to the four questions were the dependent variables.

The experimenter read the same instructions to both groups before distributing materials or showing the video. The instructions stated:

> First, I would like to say that this is a voluntary experiment and if you wish, you may leave at any time. For this experiment, you will be watching a videotape of a person being interviewed for an entry-level job position at a fictitious company called Anderson Sports Equipment. After watching the tape, you will fill out a questionnaire concerning the interview. I ask that you read the questionnaire thoroughly as soon as you get it so you will know what is being requested of you. You will be split up into two groups now and one group will move to another room to watch the video. I thank you for participating and for your effort.

The experimenter then divided the classes into two groups by having students count off by 2s. One of the groups moved to another classroom to watch the video. In one class, the group that moved watched the extraversion interview, and in the other class, the group that moved watched the introversion interview. After they received the questionnaires and watched the videos, the participants completed the questionnaires.

Results

A two-way analysis of variance analyzed the mean response to Question 2 (Would you hire the person?) by group and gender. The effect of group was statistically significant, F (1, 57) = 6.48, p = .014. The mean responses for those who watched the extraversion and introversion applicants was 3.46 and 2.80, respectively. Participants were more favorable about hiring the person depicted as extroverted.

The gender variable was not statistically significant, F (1, 57) = 2.05, p = .158. However, the interaction between group and gender was statistically significant F (1, 57) = 4.82, p = .032. There was no significant difference between the means of the women in the two groups, but there was a significant difference between the means of the men in the two groups. The men who saw the extraverted applicant had a mean of 3.57, and the men who saw the introverted applicant had a mean of 2.38; see Figure 1. The difference between the means indicated that the men were more likely to hire the extraverted than the introverted applicant.

Because Question 2 of the questionnaire directly dealt with the hypothesis, the responses to it were of greatest importance. However, the other three questions related to possible reasons for the responses to Question 2. Question 1 asked how the applicant would do in a work environment. The effects of group [F (1, 57) = 9.53, p = .003] and gender [F (1, 57) = 5.97, p = .018] were significant as was the interaction of the two [F (1, 57) = 4.22, p = .045]. Overall, men rated the applicant lower than women on how the applicant would do in a work environment. Both men and women rated the introvert as significantly less likely than the extravert to do well in a work environment, but men rated the introverts significantly lower than the women.

Question 3 asked if the applicant appeared qualified for the job. There was no significant difference for group [F (1, 57) = .78, p = .382], gender [F (1, 57) = .06, p = .801], or the interaction of the two [F (1, 57) =1.63, p = .207].

Question 4 asked how successful the applicant would be in the company. There was a significant difference for the group variable [F (1, 57) = 6.14, p = .016] and the means indicated that participants rated the extraverted (vs. introverted) applicant as potentially more successful. There was no significant difference for gender [F (1, 57) = 1.17, p = .284] or for the interaction between group and gender [F (1, 57) = .26, p = .615].

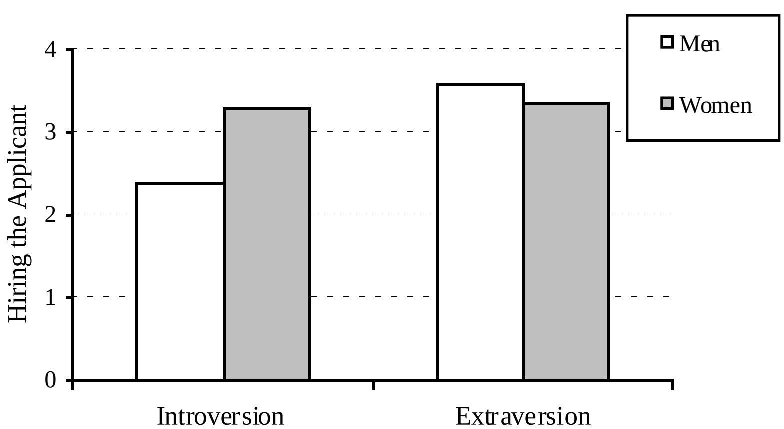

Figure 1. Male and female hiring ratings for applicants displaying introversion or extraversion.

Discussion

In addition to results from previous studies investigating which factors influenced success in a job interview situation, the current study ascertained that the applicant's extraverted and introverted behavior also had an influence. Prior research found that more dominant applicants were more successful in interviews (Tullar, 1989). The ability to speak in an interview is more important to the interviewer than the applicant's appearance (Parsons & Liden, 1984). Applicants are more likely to be hired if they use the self-focused type of impression management technique (Kacmar, et al., 1992). In studies more closely related to the present one, researchers showed that extraverts' way of looking at and listening to interviewers, along with their relaxed nature, had a positive effect on the result of the interview (Iizuka, 1992). Because of findings from these studies, including the present investigation, interviewers and applicants can use the information to their advantage. With this knowledge, applicants can change their interview style to a more extraverted one to obtain a more successful outcome, and interviewers can become more aware of variables that influence their decision-making tendencies when choosing an employee.

Future experiments can extend the efforts of the current experiment. The experimenter judged whether the person in each video exhibited extraversion or introversion. Thus, there was no manipulation check. A more convincing approach would have individuals view a variety of videos and pick ones that best illustrate an extraversion and introversion style.

Future research should also manipulate the applicant's gender as well as the interviewer's gender to increase the study's external validity. Neither did the present study examine nor control for the personality (i.e., extraversion and introversion) of the participants. Left unanswered was whether preferences for personality of the applicant varies as a function of their personality of the judge.

Additional research is needed to clarify the role of the type of occupation. Investigators could make separate videos depicting significantly different occupations (e.g., salesperson vs. librarian). Incorporating actual business professionals to administer interviews would add more realism to the findings.

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Appendix A

Script of Interview on Videotapes

Interviewer: Thanks for coming this afternoon. I just need to ask you a few questions. Why don't you tell me about yourself.

Applicant: I graduated this past spring and am quite excited about starting my career. I worked as a gopher for a business for a couple of summers and had an internship during my senior year at a manufacturing company near the school. That experience has made me even more interested in business and the processes of it.

I: Well, what do you know about our company and why did you choose Anderson Sports Equipment?

A: I've always been a sports fan, but besides that I am impressed by the way you do business. Your company manufactures and sells sports equipment for all sports but mainly baseball. Anderson Sports is one of the leading sellers on the market in America as well as Japan. I chose this company because it has a very secure future and I would like to commit to one company for a long period of time.

I: What are your career goals?

A: My main goal, of course, is to be as successful in my division as possible. I also want to be proud of my work and have others find it respectable as well.

I: If you got this job and had it for a while, what would your boss say about you?

A: He or she would say that I am a very competent person who gets the job done well. I am a hard worker and I think that it could be seen by the work that I do. I'm sure there would be a lot of things that I would still have to learn, but overall I think my boss would be impressed with my work habits and capabilities.

I: What would your coworkers say about you?

A: They would probably feel that I am a person who gets along with everyone and is not one who causes problems in the work place. I would hope that they would think that I have some good ideas and we could work together to make out projects even that much better.

I: How do you best motivate others?

A: I think the best way to motivate others is to get them excited about what they are doing. If you can get them to feel that what they are doing is important and maybe even fun, they will do the project with more enthusiasm and won't be dragging along feeling like they are wasting their time.

I: If you were to become a manager, what strength do you have that would make you a good one?

A: I feel that I am a good listener and that would be very beneficial in being a manager. I have always been able to listen and understand people's problems well which has also made them trust me and know that I would always be there for them. It's very important that a manager have a skill such as listening so his or her employees can feel like part of the team.

I: Thank you very much. I'll get back to you.

Appendix B

Questionnaire for Interview Videotape

Gender:	M	F		
Classification:	F	So	J	Sr
Major:				

Circle the number that corresponds to your answer.

1) How do you think the person on the videotape would do in a work environment?

1	2	3	4	5
Very Bad	Somewhat Bad	Don't Know	Somewhat Good	Very Good

2) Would you hire the person?

1	2	3	4	5
Definitely Not	Probably Not	Don't Know	Probably Yes	Definitely Yes

3) Do you think the person is qualified for the job?

1	2	3	4	5
Definitely Not	Probably Not	Don't Know	Probably Yes	Definitely Yes

4) How successful would this person be in the company?

1	2	3	4	5
Not Successful	Somewhat Not Successful	Don't Know	Somewhat Successful	Very Successful

Comparison of Honesty in Military and Non-Military Populations

Lynee D. Lillie-Murray
Bellevue University

Accurately weighing potential employee honesty is of great concern to employers. With the down-sizing of the military, many former service personnel are entering the civilian work force. To discover if these military-trained personnel could be a rich source of new employees, this study investigated both military and non-military persons for honesty, using the Phase II Profile Integrity Inventory (Lousig-Nont & Associates, 1982). Twenty-nine military personnel from a mid-western Air Force base and 21 others, who had college but no military experience, volunteered to participate. The results indicated that the military group scored higher on honesty than the non-military group. The military participants also scored lower on subscales that measure bad attitudes and the rationalization of dishonest behavior.

A major problem confronting business and industry is internal theft (Martin, 1989: Sackett & Harris, 1984). The impact of employee theft on business and consumers is enormous. Internal theft has increased at an alarming rate during the last two decades. The estimated annual loss to American businesses from employee theft is in excess of 40 billion dollars (Palmiotto, 1983). Zemke (1986) pointed out that when calculated on a per minute basis employee theft is equivalent to a $7,125 loss per minute. Recently, according to Effective Media Inc. (1998), at least 110 billion dollars is lost annually as a result of theft in the workplace. This figure includes loss of money, merchandise, information, and time. Industries that allow employees access to money and merchandise, such as retail stores, banks, and warehouses, have the greatest need for pre-employment screening (Sackett & Harris, 1984).

Until recently, employers have typically used two methods to assess employees' honesty, written tests and the polygraph. In 1988, Congress passed a law prohibiting use of the polygraph by private employers as a pre-employment test (Hartnett, 1991). With employers' increasing demand for paper-and-pencil measurements, psychologists have developed more reliable preemployment tests (Jones, Joy, Werner, & Orban, 1991; Hartnett & Terranova, 1991).

Most businesses of medium to large size perform a physical inventory once a year. Even if businesses could afford to perform two physical inventories a year, dishonest employees would still have plenty of time to abscond with merchandise. Because of the consequences of such undesirable behaviors, employers are examining techniques for finding more honest employees.

The military is experiencing major budget cuts and down-sizing (Davis & Kugler, 1993, Cohen, 1997). As a result, many military persons are either leaving military service voluntarily or retiring early. Because of an influx of new workers, employers are interested in discovering whether former military personnel are a viable pool of honest employees.

Sackett & Wanek (1996) reviewed the use of measures of honesty, integrity, conscientiousness, dependability, trustworthiness, and reliability for personnel selection. They concluded that the increment in knowledge of and insight into integrity testing since the Sackett, Burris, and Callahan (1989) review is substantial. Specifically, in the domain of criterion-related validity, the cumulative database has grown dramatically, and the pattern of findings is consistently positive. A large database now links integrity test scores to productive behavior as well as overall job performance. This large database also documents the lack of relationship between integrity testing and cognitive ability measures. Thus, the prediction of job performance by integrity tests is not significantly attributable to cognitive ability (Sackett & Wanek, 1996).

For the current study, the Phase II Profile Integrity Inventory, developed by Lousig-Nont and his associates, was used. The test producer (Lousig-Nont and Associates, 1982) has validated the inventory. In addition, Martelli (1988), an independent researcher, evaluated the inventory according to the American Psychological Association's (1980) principles for the validation of personnel selection procedures. Statistically

Cleveland Evans from Bellevue University was the faculty sponsor for this research project.

significant results supporting the construct validity, and criterion-related and test-retest reliability were found.

The purpose of this study was to identify differences in a pre-employment screening inventory (i.e., the Phase II test) between military and non-military personnel. Because military training includes strict adherence to rules, working within a team structure, and following a code of ethics, I hypothesized that differences would exist between the groups. Because military training is similar for both men and women and in the absence of reported sex differences in honesty, I did not expect to find gender differences.

Method

Participants

Twenty-nine military personnel, 7 women and 22 men, volunteered to participate. Twenty-one non-military individuals having had college experience also volunteered; there were 14 women and 7 men. The mean age of participants was 33.5 years. The age range for military participants was 23-52 years, whereas the non-military age range was 20-44 years. Eight percent of the participants represented ethnic minorities. Among the non-military participants, 5 described themselves as Black and 1 as a mixture of White, Black, Asian, and Hispanic.

Materials

The Phase II Profile Integrity Inventory is a pre-employment and promotion screening device (Lousig-Nont & Associates, 1982). This 117-item inventory was used because of its ability to detect dishonest answers via a "lie scale" built into the test. The inventory provides information on eight scales: a Validity Scale, Thinking, Rationalization, Bad Attitudes, Minor Admissions, Major Admissions, Good Attitudes, and Confidence scales. Martelli (1988) independently assessed the inventory's validity and reliability.

The Rationalization score measures how the person rationalizes acts of dishonesty. Sample items included (a) thinking you can have a good reason to steal from work and (b) believing people steal because employers don't pay enough. There are 31 possible bad answers. Examples from the Bad Attitudes scale included (a) believing the average person steals when they think they won't get caught and (b) believing everyone has stolen something from work. The Confidence score indicates how confident test producers are that test takers will be an honest employee.

Procedure

The Phase II Profile Integrity Inventory was administered according to its guidelines. After reading the instructions, participants signed a sheet, which included questions regarding race, age, and military status. Consent forms included ethical statements about confidentiality and the opportunity to withdraw without penalty. The instructions informed the participants about the number of questions on the inventory and asked them to answer each question honestly. No participant required more than 35 min to complete the materials. After all tests were collected, participants were debriefed as to the nature of the study.

Completed Phase II Profile Integrity Inventories were mailed to Lousig-Nont and Associates, who scored and returned the results. Two non-military participants admitted lying on some questions. Their results were not included in the analysis of data.

Results

Table 1 contains the number of individuals in the military and non-military groups whose overall profile scores, rated according to RISK resulted in placing them in the low or moderate to high risk groups. The results of a chi square test for independence, ($\chi 2$ (1) = 4.67, was statistically significant at the $p < .05$ level. The results showed a relationship between risk level and military status with a higher number of military (vs. non-military) in the low risk category. Conversely, there was a higher number of non-military participants in the high risk category.

Table 1
Overall Profile Scores listed by RISK

Test	Military	Non-Military
Low	17	5
Moderate to High	12	14
Total	29	19

Table 2 contains the 9 scale means and ANOVA results by group. A two-way ANOVA was performed on the scale scores for the variables of military status and gender. The means for both the Rationalization and Bad Attitudes scales were significantly different for military and non-military participants. The non-military participants had higher scores for both of these subscales.

Table 2
Means and ANOVA Results for Phase II Profile Subscales and Group

Subscales	Military		Non-Military			
	Mean	(*SD*)	*Mean*	(*SD*)	*F*	*p*
Rationalization	1.14	(1.4)	4.58	(3.0)	21.16	< .001
Bad Attitudes	5.10	(2.5)	9.21	(4.8)	12.89	.001
Total Score	142.24	(42.9)	101.21	(48.4)	9.62	.003
Confidence	58.93	(18.2)	43.05	(22.3)	6.13	.017
Major Admissions	1.21	(2.2)	1.95	(2.0)	3.88	ns
Good Attitudes	30.79	(5.9)	28.50	(5.7)	1.78	ns
Validity Scale	9.71	(0.5)	9.63	(0.7)	1.76	ns
Minor Admissions	.72	(0.7)	1.11	(1.0)	.70	ns
Thinking	.59	(1.0)	.58	(0.8)	.23	ns

Note. All ANOVAs had 47 degrees of freedom.

Additionally, overall total scores and Confidence level (of the individual's honesty) were also significantly different; military participants displayed more honest scores. There were no gender differences on any scales.

Discussion

As hypothesized this study found differences in self-reported honesty between persons who had military experience and those who had not. One cynical interpretation is that the military educational system has merely "trained" its personnel to respond correctly to ethical questions or to fake the results. However, Snyman (1990) evaluated the fakability of honesty tests and found that the Phase II Profile was "unfakable." Snyman tested three pre-employment screening devices in his study, including the Reid Report-Modular Version, the Wilkerson Pre-Employment Audit, and the Phase II Profile Integrity Inventory. One third of the participants were asked to "fake good" on these tests. All participants received satisfactory total scores. However, only the Phase II Profile results indicated they had not passed the validity or "lie scale," which detects and reports attempts by the testee to deceive the test.

Interestingly, there have been few studies about honesty among military personnel. Perhaps, this issue is too controversial, especially because of scandals in the military during recent years. If military researchers have conducted research, they have not published the results of those studies.

The results from the present study demonstrates that these military and non-military personnel are alike in many ways. The number of minor and major admissions of previous theft did not differ significantly between the two groups, although the number of major admissions of previous theft approached significance ($p < .055$). Results on the Thinking scale, which measures how often the person thinks about doing something dishonest, did not differ. Although the military participants had a slightly higher mean score on good attitudes, the difference was not significant.

According to these Phase II Profile results, the main difference between these two groups was in the way they rationalize actions and the number of bad attitudes they hold—bad attitudes have been associated with dishonest people.

Perhaps, non-military persons hold more attitudes that are conducive to "trying to beat the system." On the other hand, military persons may have the mind set that one must "know and work within the system." Most recruits are young, just out of high school or college, perhaps predisposing them to accepting new ideas about ethics and morality. While in basic military training, the military hierarchy expects adherence to very strict rules and regulations, not only during the typical workday but all day. This involuntary adherence to rules may become voluntary because personnel see first-hand how well the military system works at ensuring its soldiers' safety. Adherence to rules may also be the result of having clearly defined expectations in addition to having clear and immediate consequences for inappropriate behavior.

Does the experience of military life and training contribute to the observed differences in this study, or does the military attract individuals with pre-existing qualities of honesty? Additional research is needed to answer those questions. Another limitation in the present study was a confounding between military status and gender. A chi-square test for independence revealed a significant relationship, $\chi 2$ (1) = 9.21, $p < .01$, in which the military group had a higher proportion of men and the non-military group had a higher proportion of women. The greater honesty attributed to the military personnel may be influenced by gender. A subsequent study that controlled for gender would overcome the limitation in this study.

Future research might also differentiate military personnel by officer community and service branch. Because each branch of the military has different training regimens, an examination of persons in different branches of military service might reveal some unexpected differences in honesty.

In summary, the results of this study indicate that the influx of military personnel into the civilian work force could provide an excellent pool of more honest employees. As corporations expand to worldwide markets involving more complex decision making and management skills, corporations should view honest employees as valuable assets to their organizations.

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Factors Influencing Participants' Attitudes About Wildlife

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This study measured the effect of types of description and previous information on participants' attitudes about wildlife conservation and other environmental concerns. Participants consisted of 39 undergraduate students enrolled in General Psychology classes. Participants were assigned to either a positive, neutral, or negative description of a gorilla. The dependent variable was participants' responses to Likert scale questions. No effects were found for the type of description of gorillas. Ex post facto analysis revealed that participants who had seen the movie Gorillas in the Mist *had a more positive wildlife conservation attitude. This finding is the basis for future research to assess the possibility that witnessing others' concern can increase observers' concern for wildlife.*

Numerous studies have investigated attitudes about wildlife, and investigators have speculated about which variables affect these attitudes. The connection between age and attitudes towards animals is one of the relationships most frequently studied. For example in a cross-sectional study, Kellert (1985) reported three distinctive developmental stages: (a) from 6 to 9 years of age, participants showed an increase in emotional concern and affection for animals; (b) from 10 to 13 years of age, participants showed a dramatic increase in factual knowledge about animals; and (c) from 13 to 16 years of age, participants showed an increase in ethical and ecological concern for animals and the environment.

Kidd and Kidd (1990) investigated how different variables related to children's attitudes towards animals. One of these variables was whether owning a pet related to the formation of positive attitudes towards all animals. They found that children who had pets had more interaction with others' pets, read and watched materials about animals, and visited zoos and wildlife parks significantly more than those participants who did not own pets. Their study also found that grade school students liked pets significantly more than preschool or high school students.

Research findings also showed that pet ownership in childhood had a positive affect on adults' attitudes about wildlife. In a study by Paul and Serpell (1993), adults who had many pets in childhood reported higher concern for wildlife than did adults who had few or no pets during childhood. Their study also found that adults who had many childhood pets were more likely to be members of conservation, environment, and animal welfare organizations than those who did not have childhood pets.

Eliciting positive attitudes about animals is a major concern for zoos and wildlife parks that also promote wildlife conservation. There have been many different approaches to increase education about and appreciation for wildlife. One popular approach is to provide actual contact between children and animals, such as in a petting zoo. Kidd, Kidd, and Zalsoff (1995) reported on interviews with parents and their 3 to 7 year old children in main zoo and petting zoo areas. Children at petting zoos reflected significantly more interest in the animals; they spent more time watching and talking to animals than children in the main zoo areas.

Conversion from enclosed caged exhibits to free-roaming naturalistic habitats is a relatively recent approach of zoos to increase patrons' appreciation for captive and free- roaming wildlife. A study by Price, Ashmore, and McGivern (1994) examined reactions of zoo patrons to either caged or free-roaming tamarin monkeys. The study found that participants spent more time watching and commenting on the free-roaming tamarins than the caged ones. The participants said that they had learned significantly more from the naturalistic habitat tamarins than the caged tamarins. Although most studies have supported the view that visitors enjoy observing animals in more naturalistic habitats, what is unclear is whether this enjoyment translates into lasting positive attitudes about animal conservation (Finlay, James, & Maple, 1988).

Education is also important in increasing awareness about the environment. A study by Armstrong and Imapara (1991) evaluated the impact of Naturescope, an environmental education program developed by the National Wildlife Federation. This program was a cur-

Casey Cole and Gwen Murdock from Missouri Southern State College were the faculty sponsors for this research project.

riculum supplement in 48 fifth and seventh grade classes for eight weeks. Investigators found few significant differences in knowledge between the groups exposed to the program and the control group, but the exposed group did show an increase in positive environmental attitudes.

For the past three decades, television has been a popular medium for increasing environmental awareness. Fortner and Lyon (1985) investigated use of a two-way television cable system to measure how much participants' knowledge and attitudes about environmental issues increased after viewing a Jacques Cousteau special. Viewer knowledge increased significantly and was still high when tested two weeks later. Viewer attitudes towards the conservation goals of the producers also increased but returned to pretreatment levels after two weeks.

All of these studies have significant implications for increasing the public's positive attitudes about animal conservation and environmental awareness. The present study was an experiment inspired by the story of Binti, the Chicago gorilla who rescued a young boy. The youngster fell into Binti's enclosure, and she carried him to a doorway where paramedics were waiting. The study examined participants' wildlife conservation attitudes after reading either a positive, neutral, or negative description about gorillas. The hypothesis was that participants who read the negative description about a gorilla would respond less favorably to a wildlife conservation questionnaire than participants who read the neutral or positive description about a gorilla.

Method

Participants

Participants in this experiment were 39 undergraduate students enrolled in two sections of general psychology classes at a Midwestern college. Participants included 26 women and 13 men.

Materials

Materials consisted of three categories of description: (a) positive, which was entitled "One Great Ape" and was excerpted from reports by Bey (1996) and O'Neill , Green, and Cuadros (1996); (b) neutral, which was entitled "The Gorilla" and was excerpted from an encyclopedic account about gorillas (Schaller, 1993); (c) negative, which was entitled "Death of Marchessa" and was excerpted from a National Geographic story (Veit, 1981). The descriptions were stacked so that every third person got the same description. Each description was approximately one page long and was attached to a questionnaire that consisted of four sections: (a) 22 Likert scale items, (b) four American public concern items, (c) four personal concern items, and (d) eight demographic questions including questions about pet ownership, gender, viewing the movie *Gorillas in the Mist*, and regularly watching TV programs about wildlife. The Likert scale questions were adapted from a study by Poresky (1991). The American public and personal environmental concern items were developed from a study by White and Plous (1994). The materials also consisted of a TV set and a video tape recorder, which were used during debriefing to show a one min excerpt from a video showing typical wild gorilla behavior (Kane & Skinner, 1981).

Procedure

After obtaining participants' informed consent, one of the three descriptions and a survey were distributed to each participant. After reading the description, participants responded to Likert scale questions measuring attitudes about wildlife conservation and to demographic questions. Participants were debriefed and told about the nature of the independent variable and that the behavior described in the negative category of the gorillas' description was not typical gorilla behavior. In order to reduce any negative feelings toward gorillas associated with the negative description, participants were shown a short video illustrating typical wild gorilla behavior.

Experimental Design

This study used a 3 x 2 experimental design. One independent variable was type of description (positive, neutral, or negative): (a) a positive description of a gorilla, Binti, the Chicago Zoo gorilla that rescued a boy who fell in her enclosure; (b) a neutral description of general physical characteristics and habitats of gorillas; (c) a negative description about a male gorilla who attacked and killed a female gorilla in his group. The second independent variable was awareness about Binti, the Chicago Zoo gorilla. Dependent variables were responses to Likert scale questions.

Results

The data were analyzed using MANOVA statistics. There was no effect for the first variable, type of description, or for participants' previous exposure to the story of Binti. Neither was there an interaction between description and previous knowledge about Binti. Participants responded differently to the different Likert items, F

Table 1
Means for Gorilla Conservation Items

Gorilla Conservation Questions	*Mean*	*SD*
1. I feel that the gorilla is a valuable part of our planet	4.33	.70
2. I feel that current conservation measures to protect gorillas should be stronger	4.15	.71
3. I feel that gorillas have admirable qualities	4.15	.81
4. I feel that chemical and industrial pollution that threatens gorillas should be stopped	4.31	.77
5. I feel that persons who endanger gorillas or their habitat should be handed stiff fines or prison terms	4.36	.81
6. I feel that urban development that threatens gorillas should be stopped	4.15	.87
7. I feel that agricultural development that threatens gorillas should be stopped.	3.90	.87
8. I feel that hunting and trapping that threatens gorillas should be stopped.	4.51	.72
9. I feel that illegal trading that threatens gorillas should be stopped.	4.44	.75

Note. Coding Scheme: 1=strongly disagree, 2=disagree, 3=no opinion, 4=agree, 5=strongly agree

(21,693) = 11.08, $p < .01$, and 25% of the variability of the participants' responses on the questionnaire were accounted for by the Likert items. There was a significant difference between the Likert items, suggesting that they were independent items. The responses to the Likert items were averaged for each participant for an overall attitude score for each person. Table 1 lists the mean responses for the nine gorilla conservation items. Responses to the idea of gorilla conservation were generally positive regardless of the type of description.

Table 2
Significant Differences for Ex Post Facto Variables on Attitude Items

Item (group means)	*F* (1, 37)	*p*
Whether the American public is concerned enough:		
1. About the environment		
Women (1.08 vs. 1.38)	4.39	.043
2. About animal protection		
Seen the movie *Gorillas in the Mist* (1.09 vs. 1.47)	6.35	.016
3. About global deforestation		
Seen the movie *Gorillas in the Mist* (1.05 vs. 1.41)	9.39	.004
Pet Owners (1.14 vs. 1.75)	9.72	.004
T.V. Programs[a] (1.09 vs. 1.17 vs. 1.75)	4.93	.013
4. About developing alternative energy resources		
Pet Owners (1.29 vs. 2.25)	12.48	.001

Note. Coding scheme: 1=not concerned enough, 2=concerned enough, 3=too concerned

[a]Watching of wildlife TV programs coding scheme: 1=often, 2=occasionally, 3=never

The overall score was used to analyze the effect of the four ex post facto variables; (a) pet ownership, (b) gender, (c) whether participants had seen the movie *Gorillas in the Mist,* and (d) how often they watched TV programs about wildlife. There were four items that dealt with the American public's concern about conservation issues. These items were analyzed separately for each of the ex post facto variables. Table 2 shows that significant differences existed between these groups and their responses to the American public concern items.

Because participants who had seen the movie *Gorillas in the Mist* were more likely to have a conservation orientated attitude as revealed by the overall scores (4.33 vs. 3.92), $F(1, 37) = 5.10$, $p = .03$, separate analyses were conducted on the nine gorilla conservation items for how people who had seen the movie compared to people who had not seen the movie. Table 3 shows that participants who had seen the movie *Gorillas in the Mist* expressed more favorable agreement with three of the nine gorilla conservation items.

Discussion

The investigator's hypothesis that those participants who read the negative description instead of the neutral or positive description of the gorilla would answer less favorably to the wildlife questionnaire was not supported.

Table 3
Significant Effects of Previous Exposure to the Movie, Gorillas in the Mist, *on Attitudes About Gorillas*

Questions	Movie	No Movie	*t*	*p*
1. Gorilla is valuable part of planet	4.60	4.00	2.84	.007
2. Conservation should be stronger	4.40	3.90	2.21	.034
3. Gorillas have admirable qualities	4.41	3.82	2.36	.023

Note. Coding Scheme: 1=strongly disagree, 2=disagree, 3=no opinion, 4=agree, 5=strongly agree
Twenty-two participants had seen the movie and 17 had not.

Generally all participants showed a wildlife conservation orientated attitude (i.e., a ceiling effect). However, there has been little research on how a description of an animal affects wildlife conservation attitudes. With the recent story of Binti, the timing is excellent for research in this area.

That those participants who had pets rated higher on concern for global deforestation and developing alternate energy sources is supported by previous research by Paul and Serpell (1993), which found that adults who had pets as children scored higher on environmental issues. The finding in this study that women (more than men) thought that the American public is not concerned enough about the environment (see Table 2) is supported by Kellert's research (1985), which found an increasing moralistic concern among female students from eighth to eleventh grade. The effectiveness of TV programs on knowledge about environmental issues is supported by the results that found that participants who often watched wildlife programs thought that the American public was not concerned enough about global deforestation (see Table 2).

The results of the 70 different statistical analyses (14 for the independent variables and each of the ex post facto variables) could produce 3.5 significant results simply by chance. Pretesting the survey before conducting the experiment could avoid some of the problems with Type I errors.

Probably the most important finding in this study is that participants who had seen the movie *Gorillas in the Mist* had higher ratings on wildlife conservation attitudes than those who watched wildlife TV programs. I hypothesized that people who witness others showing concern for animals (i.e., modeling) would express more concern for animals than those who only witness the animals themselves. This finding could also reflect a self-selection factor (i.e., those who watched *Gorillas in the Mist* may have watched the movie because they already had greater concern for animals).

Future research might show two groups of participants different versions of a videotape, one with a person modeling concern for animals and one without. Another suggestion would be to assess how different levels of descriptions of animals affect anxiety. To help ensure external validity, I recommend that future studies employ populations other than college students.

In conclusion, generating the hypothesis that witnessing others' concerns for animals increases concern in observers is especially important and has great implications in our efforts to increase awareness about wildlife's plight. Perhaps the general public has difficultly identifying with wild animals unless they witness other people's concern for animals, which elicits an empathetic responses. To help preserve wildlife for future generations, we may need to increase wildlife education that illustrates others' concern for animals instead of just showing the animals themselves.

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Influence of Expectancies and Experience on Impression Formation

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We hypothesized that an initial description about a professor would form a lasting impression and that subsequent information would have little influence on participants' evaluation of the professor. Sixty-two male and female undergraduate students read positive, negative, or neutral descriptions of a professor, completed a post-treatment evaluation, and viewed a videotape of the professor teaching class in which he behaved in a positive, negative or neutral manner. Participants then completed a post-treatment evaluation of the professor. Results indicated that initial impressions influenced subsequent evaluations of the professor, regardless of the observation of the professor. Implications for factors that influence student evaluations are discussed.

Impression formation occurs on a daily basis in all walks on life. First impressions can influence whether one is hired for a job, chosen as a tennis partner, or selected as a spouse. There is evidence to indicate that when people interact with one another, or when there is the prospect of interaction, individuals form an impression about that person (Jones, Rock, Shaver, Goethals, & Ward, 1968). Despite considerable research on impression formation, questions remain concerning the degree to which impressions influence actual behaviors and the extent to which people's expectations color their impressions of others (Matsumoto, 1996).

Research findings (e.g., Osborne & Gilbert 1992; Tiwari & Agarwal, 1989) indicate that people's impressions of individuals with whom there is little chance of interaction will be only fleeting, but if there is a strong possibility for future interaction, they will form a more lasting impression. Marlowe, Gergen, and Doob (1966) found that individuals gave others a more favorable evaluation if there was a chance of interaction and if the individual was a prestigious public figure. Marlowe et al.'s evidence demonstrated that a real or known person is more likely to get a more positive evaluation than a wholly novel or unfamiliar person. If the possibility of an interaction requires extraordinary activity, individuals may be more concerned about their own behavior than the behavior of others. According to Vonk (1993), this view may lead to errors in attributing characteristics to an individual with only a limited amount of available information. Also, Sears's (1983) research suggests that Americans tend to give individuals more positive evaluations than the group to which the individual belongs. For example, a college professor may be evaluated more favorably than a group of professors as a whole. Sears's results support a person-positivity bias.

Other research, however, supports a negativity effect in person perception. According to the negativity effect, unlikable or immoral behaviors or traits carry more weight in evaluation than likable or moral attributes (Vonk, 1993). Research has shown that people believe positive information does not necessarily reflect the true nature of the person, but may be the result of that person trying to appear socially desirable. Negative information is more likely to be viewed as accurately reflecting the individual's personality and tends to make a person less likable. The possession of an initially hostile attitude toward the person leads to a restriction of communication and the perseverance of a hostile attitude, which prevents the acquisition of data that could correct the initial impression (Kelley, 1950).

Research by Downs and Lyons (1991) demonstrated how relatively trivial aspects of a person's behavior can become an impediment to, rather than a catalyst for, accurate social judgments. For example, an individual may pay more attention to a person's physical attractiveness or annoying laugh than the person's character. Although such attention is a potential source of error, the valence of the information also plays an important role because negative traits tend to be more influential than positive traits (Skowronski & Carlston, 1989)

This study measured the relative importance of first impressions on the evaluations of another person when intervening and sometimes contradictory experiences occurred subsequent to the events that influenced the first impression. We attempted to create an initial impression that was positive, negative, or neutral about a university professor. A professor was used as the target person because students could anticipate future interactions. We hypothesized that the initial description of the professor

Richard Miller from the University of Nebraska at Kearney was the faculty sponsor for this research project.

would form a strong, lasting first impression and that the subsequent video would have little influence on participant's ultimate evaluation of the professor.

Method

Participants

Sixty-two undergraduate students (20 men and 42 women) participated in order to partially fulfill a course requirement. Students received extra credit points for their participation; they ranged in age from 18 to 35 years old (*M* = 20.5 years); 95% were White, and 5% were Black or Hispanic. Participants were tested in different groups that were randomly assigned a written description and video scenario.

Materials

Participants received a written description of the professor that portrayed him as either positive, negative, or neutral. The professor used in the present study was a male psychology professor. All three descriptions listed the professor's accomplishments and hobbies, but the positive and negative descriptions had an additional paragraph describing the professor's positive or negative characteristics. The positive description portrayed the professor as an easy-going person who was very involved with students. The negative description portrayed the professor as a hard-nosed teacher who was extremely demanding of students.

The immediate posttreatment questionnaire contained five items to assess participants' impressions of the target professor based on the written description. The posttreatment questionnaire asked whether participants expected the professor to; (a) grade fairly, (b) be knowledgeable about the subject matter, (c) be enthusiastic about the subject material, (d) learn a great deal from the professor, and (e) encourage students to seek help and be available for assistance. Each question was accompanied by a five-point Likert scale that ranged from 1 *(strongly disagree*) to 5 (*strongly agree*).

The delayed posttreatment questionnaire was identical to the immediate posttreatment questionnaire with the exception that it contained four additional items intended to assess participants' feelings on the video scenario. The additional items asked whether the participants felt (a) they would be treated fairly and courteously by the professor, (b) they would feel free to disagree with the professor in a class, (c) the professor would be organized, and (d) the professor would have a sense of humor.

The video scenarios were 3-to-4 min clips of the target professor lecturing and were manipulated to portray him as either positive, negative, or neutral. The positive video scenario showed the professor telling jokes to the class and appearing relaxed. In the neutral video scenario, the professor was simply lecturing over class material. In the negative video scenario, the professor was telling the class that he did not care if they turned their work in on time, the responsibility was theirs, not his.

Procedure

Participants were screened to eliminate persons who had met the professor depicted in the video scenario and description. Participants read either a positive, negative, or neutral description of the professor, then completed the immediate posttreatment questionnaire, which recorded their present impressions of the professor. Participants then viewed one of three videos of the professor teaching class, after which they completed the delayed posttreatment questionnaire. After all participants completed the delayed posttreatment questionnaire, they were debriefed as to the nature of the study, including the manipulation of the descriptions of the professor and the video scenarios.

Results

To examine the effects of the positive, negative, and neutral information on the evaluation of the professor, overall mean scores were computed by summing the responses to the individual scale items contained in the immediate posttreatment questionnaire and dividing by the number of responses for each scale. Analysis of variance indicated that the positive, negative, and neutral written descriptions of the professor had a differential effect on the pretest responses, F (2, 32) = 8.99, $p < .01$. Participants who received the positive description rated the professor more positively (*M* = 4.33, *SD* = 0.41) than those who received the neutral description (*M* = 4.19, *SD* = 0.57) or the negative description (*M* = 3.71, *SD* = 0.69). Scheffé tests indicated that there was a significant ($p <$ .05) difference between the positive and neutral descriptions, the positive and negative descriptions, and the negative and neutral descriptions.

To examine the cumulative effects of the written description along with the effects of the subsequent video scenario, a 3 x 3 (Written Description x Video Scenario) ANOVA was used. The data indicated that the written description continued to have an effect on the evaluation scores, F (2, 32) = 17.53, $p < .01$. A positive description continued to result in a more positive evaluation (*M* =

4.51, *SD* = 0.35) regardless of the subsequent video, whereas the negative description continued to result in a more negative evaluation (*M* = 3.56, *SD* = 0.91) regardless of the type of information that followed. There was no main effect of video scenario, $F < 1$. Figure 1 shows the means for this analysis.

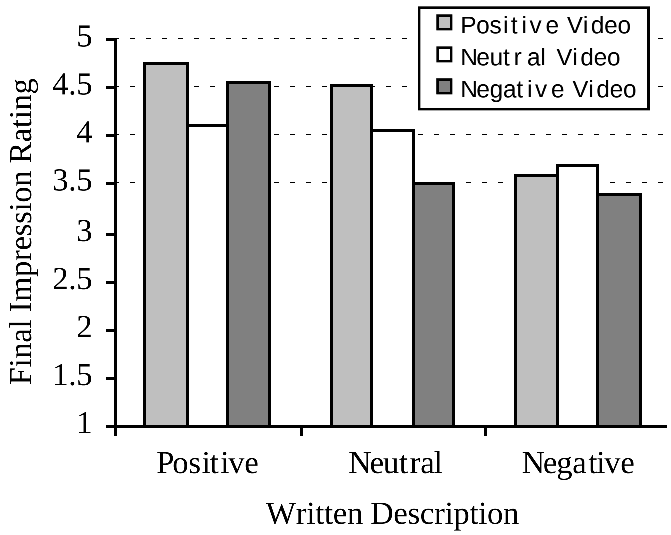

Figure 1. Final impressions for written descriptions and video scenarios.

Additional evidence that participants give greater weight to initial impressions is suggested by the following planned comparison. If initial and subsequent impressions were equally weighted, then a negative description followed by a positive scenario should be equivalent to a positive description followed by a negative scenario. However, the results showed a lower mean (*M* = 3.60, *SD* = 1.01) for the sequence of a negative description followed by a positive scenario than when the positive description was followed by a negative scenario (*M* = 4.55, *SD* = 0.26). A Scheffé test indicated that this difference was significant ($p < .05$).

There are two possible explanations for the effect of the written description on the video scenarios. The first, consistent with the first impression hypothesis, would be that the initial impression has a greater impact on the overall evaluation than any subsequent information. A second explanation for the video scenario not having a significant effect may be because the video scenarios were weak. To explore this possibility, we examined whether the positive and negative video scenarios that had been preceded by a neutral description showed clear differences (i.e., a kind of manipulation check). The results indicate that there was a significant difference between the ratings of the professor as depicted in the video scenarios. A neutral description followed by a positive video scenario resulted in a more positive evaluation (*M* = 4.54, *SD* = 0.20) than did a neutral description followed by a negative scenario (*M* = 3.50, *SD* = 0.61). A Scheffé test indicated that this difference was significant ($p < .05$). Thus, the video scenarios were not weak, and the first impression hypothesis seems a more viable explanation for the results.

Discussion

Results of the present study indicate that initial impressions influence subsequent evaluations of an individual regardless of intervening opportunities to observe an individual. This outcome may occur because the initial impression affected the expectation of the type of behavior that was expected from the target person, even when the actual behavior was inconsistent with the initial impression. We found that a positive description of the professor formed an initial positive impression that did not change regardless of the valence of subsequent information. An initial negative impression was also resistant to change regardless of the valence (i.e., positive, negative, or neutral) of subsequent information. These findings support previous research (Osborne & Gilbert, 1992; Tiwari & Agarwal, 1989) that suggested individuals would form a more lasting impression if there was a possibility for future interaction. The participants in the study had reason to believe they might have an interaction with the target professor because he was an instructor at their campus.

Although there were differences in the impressions based on the initial descriptions, the overall data tended to remain on the positive end of the scale. In fact, the students in our study rated the professor positively even when presented with negative written information. Our findings support the notion derived from cognitive dissonance theory of a person-positivity bias, which states that individuals tend to give others more favorable evaluations when there is chance for future interaction. These findings also support Marlowe et al.'s (1966) findings that individuals tend to give a more favorable evaluation if there were a chance for interaction and if the individual were a prestigious public figure. Future research may want to examine whether an opportunity for future interaction or being a prestigious public figure has more affect on the evaluation.

An alternative explanation for the significant effect of the initial description may be because of the different types of media used in the study. Participants read the initial description, then they viewed the videotaped scenario. Participants might have put more emphasis on what they read, rather than what they saw. Future research may want to explore this possibility further.

The present study may be limited in that the professor used in our study taught on the participants' campus. Thus, participants may have had prior knowledge of the professor from the school newspaper, talk by other students, and so on because of the size of the campus. Future researchers may use a professor who is unknown on the campus.

The results of the present study have implications for understanding the variables that influence students' ratings of teachers. Students' initial impressions of a professor can be based on opinions voiced by other students, suggested by other teachers, or communicated by the professor's behavior at the first class meeting. According to our findings, an initial negative impression may be difficult for the professor to overcome. Thus, professors who count on valid student evaluations to improve their teaching effectiveness may need to give careful attention to the initial impression they convey to their students.

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Effect of Exposure to Stereotyped Descriptions on Personal Sex Role Assessment

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College students (N = 147) were randomly assigned to complete 1 of 4 types of questionnaire packets. Each packet consisted of a description of either a traditionally or a nontraditionally stereotyped marital relationship placed either before or after Berzins, Welling, and Wetter's (1978) PRF ANDRO scale. The main hypothesis was that participants exposed to traditionally stereotyped descriptions before completing the androgyny scale would show greater difference between masculinity and femininity scores than participants exposed to nontraditionally stereotyped descriptions. Three-way analysis of variance of the difference between masculinity and femininity scores showed no significant differences between description types or orders of administration and no significant two- or three-way interactions among these variables and participants' sex.

The effect of gender role and gender stereotypes on how one interacts with the world has been the subject of much research. According to Bem (1981), the tendency to formulate attitudes in terms of masculinity or femininity stems from an inclination to interpret information based on the sex-linked associations that compose gender schema. Bem explained that as the tendency to view the world in such terms becomes stronger, as one becomes more "sex-typed" (p. 356), one's self-concept becomes conformed to the gender schema.

Quackenbush (1987) concluded that attribution of masculine and feminine gender roles functions as a social skill that facilitates one's personal and social efficacy. Individuals can use gender role attributions to make sense of his or her social and interpersonal environment. For example, Hoffman and Hurst (1990) found that individuals could rationalize both traditional and nontraditional sexual divisions of labor by ascribing inherent personality differences to the sexes. Specifically, Hoffman and Hurst's work suggested that people can create their own gender stereotypes in order to understand the specific situation they encounter.

Several factors can influence the process through which individuals form sex-typed or gender stereotypical social judgments. For example, Eagly and Steffen (1984) concluded that a person's social role can influence others' perceptions of her or him. Eagly and Steffen's research participants perceived a man as stereotypically different from a woman in the absence of occupational information about the man or woman, but the same participants perceived a female homemaker as similar to a male homemaker and a female employee as similar to a male employee. Also, Deaux and Lewis (1984) determined that certain components of gender stereotypes are more influential than others in making judgments. Their results suggested that the presence of one stereotype component can imply the presence of other components, that certain components can be more influential than gender identification, and that physical appearance is the component most likely to indicate the presence of other components.

In addition, Jackson, Hansen, Hansen, and Sullivan (1993) showed that stereotypical information could differentially affect people's judgments about women and men. Other researchers have found that knowledge about past behavior of the person being judged can influence social judgments involving stereotypical information (Berndt & Heller, 1986) and that judgments are more often stereotypic when individuals are not allowed time to assimilate differentiating information (Pratto & Bargh, 1991).

An overriding factor in determining the influence of sex-typed information in making judgments is gender schema accessibility. In a study of stereotype accessibility and information processing, Stangor (1988) concluded that participants possessing highly accessible gender constructs had a greater tendency to process information in terms of gender. Similarly, Hansen and Hansen (1988) determined that sex-role schemata accessibility could be increased and this increase could change the individual's social judgments. By showing participants sexually stereotypical music videos, the researchers facilitated schemata accessibility and subsequently influenced participants' judgment about a female job applicant's skill level more stereotypically.

Kenneth L. Hobby from Harding University was faculty sponsor for this research project.

In addition to the effects of schema accessibility, the degree to which gender-related information is consistent or inconsistent with gender schema affects how one processes this information. Cann (1993) found that evaluative statements that were consistent with gender stereotypes were recalled more easily when stated positively, as in “Jane is a good nurse” (p. 670), but that evaluative statements that were inconsistent with gender stereotypes were recalled more easily when stated negatively, as in “John is a bad nurse” (p. 670). Cann’s results support the hypothesized existence of an evaluative bias that is associated with information in the gender schema. In addition, Furnham and Singh (1986) determined that women who held more positive attitudes toward women recalled more positive and fewer negative items about women than did men in general and women with more negative attitudes toward women. In discussing their results, the authors emphasized the role of selective recall because memory of specific gender-related information is a function of attitudes toward the information. Likewise, Hess, Vandermaas, Donley, and Snyder (1987) found that individuals processed gender-related information differently when it was consistent with traditional sex-role knowledge than when it was inconsistent. Hess et al. concluded that interference from the dominant gender schema may have affected the participants’ recall of the information.

Building on research showing that the degree of consistency of gender-related information with gender role attitude affects information processing, the current study examined whether exposure to information that is consistent or conflicting with stereotypical gender role attitudes could alter the individual’s sex role assessment. Although Morier and Seroy’s (1994) results suggested that individuals may change the presentation of their gender role attitudes in order to appear more similar to other people, the question of whether individuals will change their gender role presentation in order to appear more consistent with gender-related information alone has not been widely researched. By presenting participants with traditionally stereotyped or nontraditionally stereotyped gender role descriptions, the current study sought to determine whether stereotypical information alone could create differences between the subsequent gender role presentations of participants exposed to a traditional or a nontraditional description. I hypothesized that participants exposed to the traditional description immediately before their sex roles were assessed would have more differentiated scores than the other participants; that is, such participants would have a greater difference between their masculinity and femininity scores on the sex role assessment than the other participants. In addition, I hypothesized that the participants exposed to the nontraditional description immediately before their sex roles were assessed would have more androgynous scores than the other participants; that is, such participants would have a smaller difference between their masculinity and femininity scores on the sex role assessment than the other participants.

Method

Participants

One hundred forty-seven students at a small Southern private liberal arts university participated as part of a class activity. Ninety-eight women and 47 men completed the packet of materials. Forty-five of the participants were freshmen, 30 were sophomores, 43 were juniors, and 29 were seniors. Thirty-four to 38 participants were randomly assigned to each of four experimental groups. Questionnaires were completed in behavioral statistics, general psychology, advanced English composition, and honors speech classes.

Materials

Based on stereotyped characteristics drawn from some items on Brogan and Kutner’s (1976) sex role orientation scale, two descriptions of a marital relationship between two hypothetical people, “Sarah” and “David,” were constructed. The first description associated David with traditionally masculine stereotyped characteristics, such as taking primary responsibility for major family decisions and associated Sarah with traditionally feminine stereotyped characteristics, such as being the primary caretaker for their preschool-age child. The second description used the same characteristics as the first description but reversed the roles so that Sarah was associated with the masculine stereotyped characteristics and David was associated with the feminine stereotyped information.

Identical questionnaires to which each description was attached asked the participants to make judgments about how satisfying they might find David and Sarah’s relationship and how happy they would be if they were in a similar relationship. These questions were designed to encourage participants to apply the information contained in the descriptions and to commit to an opinion about the quality of the relationship. Questions concerning demographic data such as sex and school classification were included in the questionnaire along with brief instructions for its completion.

To assess sex role orientation, an androgyny scale was attached either before or after each of the descriptions. Developed by Berzins, Welling, and Wetter (1978), the 56-item PRF ANDRO scale yields separate masculinity and femininity scores; each item contributes to only one score. Twenty-nine items contribute to the masculinity score, and 27 items contribute to the femininity score.

To facilitate study of the effect of the type of description on the participants' personal sex role assessments, four types of questionnaire packets were constructed using the two description types and two orders of administration; the traditional description followed by the androgyny scale, the nontraditional description followed by the androgyny scale, the androgyny scale followed by the traditional description, and the androgyny scale followed by the nontraditional description.

Procedure

A questionnaire packet containing one of the four order-of-administration and description combinations was randomly assigned to each of the students in participating courses. Participants were told that the study concerned their perception of the relationship descriptions but no mention was made of the differing description types or the differing packet types. To encourage participants to complete the packets in the proper order, a written instruction on the packet and an oral instruction directed students to complete the entire packet in order from the first page to the last and not to omit any questions.

Results and Discussion

Table 1 contains the means for the femininity, masculinity, and difference scores (same-sex score minus opposite-sex score) for each of the four experimental groups. For each of these three scores, a three-way ANOVA was performed to determine if main effects or interactions existed for the type of description (traditional or nontraditional), the order of administration (the questionnaire first or the androgyny scale first), and the sex of the participant. Similar to findings by Berzins et al. (1978), significant differences existed between the sexes in the femininity score, F (1, 137) = 18.75, p = .001; the masculinity score, F (1, 137) = 5.56, p = .020; and the difference score, F (1, 137) = 6.52, p = .012. For each of the three scores, three-way ANOVA revealed no significant differences between description types, orders of administration, or significant two- or three-way interactions among these two variables and sex.

Table 1
Mean Androgyny Scale Scores by Order of Administration, Description Type, and Participant Sex

Description Type	*n*	Androgyny Scale Score: Femininity	Masculinity	Difference
Description First				
Nontraditional				
Men	12	14.92	15.67	0.75
Women	22	17.36	13.18	4.18
Traditional				
Men	11	14.18	16.73	2.55
Women	26	18.23	13.38	4.42
Androgyny Scale First				
Nontraditional				
Men	9	13.89	17.56	3.67
Women	29	17.24	14.66	2.59
Traditional				
Men	15	16.53	14.67	-2.53
Women	21	17.33	14.52	2.95

However, the results of the analysis of the difference score for the Description Type x Order of Administration x Sex interaction approached significance, F (1, 137) = 3.37, p = .069. In addition, the directions of differences of difference scores means for participants who received the descriptions first were consistent with the hypothesis that the difference scores of those who received the nontraditional description first would be less than those who received the traditional description first. For example, the mean difference score of the men who received the nontraditional description first was 1.80 less than the mean difference score of the men who received the traditional description first. However, the mean difference score of the women who received the nontraditional description first was only 0.24 less than the mean difference score of the women who received the traditional description first. Numerically but not statistically, men were more affected by exposure to the nontraditional description first.

Although the data do not lend statistical support to the hypothesis, the results merit further discussion. As hypothesized, participants exposed to the nontraditional description before their sex roles were assessed responded more androgynously than did the other participants. Specifically, the men who were exposed to the nontraditional description before their sex roles were assessed showed a smaller mean difference between their masculinity and femininity scores than did any other group of participants.

These results are compatible with previous research. For example, consistent with the findings of Hess et al. (1987), the participants in the present study may have processed gender-related information differently when it was consistent with traditional sex role knowledge than when it was inconsistent. The traditionally and nontraditionally stereotyped information influenced participants' subsequent sex role presentations differently. In addition, the results of the present study are compatible with Morier and Seroy's (1994) findings. In the same way that Morier and Seroy's participants changed the presentation of their gender role attitudes in order to appear more similar to other people, the participants in the present study gave sex role presentations that appeared more similar to the specific descriptions to which they were exposed before their sex roles were assessed. The men who were exposed to the traditional description before their sex roles were assessed presented themselves as more masculine and less feminine than the men who were exposed to the nontraditional description first. However, the women who were exposed to the traditional description before their sex roles were assessed presented themselves as only slightly more feminine and less masculine than the women who were exposed to the nontraditional description first.

The results of the present study have important implications for further research. For instance, researchers who are involved in designing instruments for sex role assessment should carefully consider what specific types of information might influence participants to change their sex role presentation. Researchers might assess how participants would respond differently to instruments with traditionally or nontraditionally stereotyped information embedded in the instruments' titles or in individual items. Researchers might also assess whether or not participants alter their sex role presentation when they are made aware that their sex roles are being assessed.

Another interesting area of research related to the present study would be an investigation aimed at determining the specific aspects of the stereotyped descriptions that influenced men to respond differently than women. Pinpointing the features of the descriptions that lead men to alter their sex role presentations could provide insight into the specific components of present-day sex role stereotypes and how men's and women's sex role stereotypes differ.

The near significance of the results of the present study, the conformity of these results with previous research, and the implications of these results for further research should stimulate future investigations to employ similar procedures. However, future studies should address and correct certain limitations of the present study. The first and most important limitation of the present study was the PRF ANDRO. This scale may not be the most effective instrument for use in this type of investigation. Some of the items developed by Berzins et al. (1978) appear dated or unrelated to sex role attitude. For example, Item 45 reads, "Once in a while I enjoy acting as if I were tipsy," and Item 3 reads, "Surfboard riding would be dangerous for me." Also, in the present study, the PRF ANDRO occasionally yielded unreliable results. For instance, men who were randomly assigned for exposure to the nontraditional description after their sex roles were assessed had a mean difference score of 3.67, whereas men who were randomly assigned for exposure to the traditional sex role after their sex roles were assessed had a mean difference score of -2.53. These scores are problematic because, at the time they completed the PRF ANDRO, they had been given the same instructions and had not been exposed to either description.

The second major limitation of the present study was the sample size and the population from which the sample was drawn. Because the sample used in the present study was small and was drawn from a population composed exclusively of university students, the external validity of the results is limited. However, if a larger sample from a larger population and a different sex-role-assessment instrument were employed, future investigations might find more conclusive results.

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Perceptions of Couples' Compatibility: Racial Bias

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The present study investigated interracial prejudice among White college students. Participants were 50 female and 31 male students from general psychology classes at Wayne State College. Participants viewed two photographs, one man and one woman. The photographs were individual pictures of White, Black, or Hispanic men or women. Nine groups of participants looked at different combinations of photographs. Participants rated the couples' compatibility. Results showed that the White woman/White man couple was rated significantly more positively than any other female/male couples. The results suggest that White students view couples' compatibility significantly more negatively for interracial or other-racial groups.

Researchers have studied several dimensions of interracial marriages between White and non-Black minority persons (Tischler, 1990). Interracial marriages are more likely to occur when partners are older and when one partner has been married before. White men in interracial marriages have usually completed college.

To determine attitudes of Black college students toward interracial relationships, Clark, Windley, Jones, and Ellis (1983) studied dating patterns of Black students at a mostly White college. Participants completed a dating survey and a checklist regarding racial stereotypes. Results showed that 94% of participants said they would casually date interracially. Of the Black participants who were seriously dating another Black person, 42% would not date anyone of another race. Black men were more favorable about dating White women than Black women were about dating White men. Black men dated more interracially than did Black women. The authors concluded that the majority of participants preferred to date within their own race. Although interracial relationships occurred, the relationships were more casual.

To determine whether children were also more likely to form relationships within their own race, students in Grades 6-10 were tested (Moore, Hauck, & Denne, 1984). Participants completed questions regarding racial prejudice, dating, marriage, school, and social relationships. Results showed that White students were significantly more prejudiced than Black students in circumstances that involved prolonged interracial dating or marriage. Boys were significantly more prejudiced than girls. Prejudice did not differ whether the White participants did or did not have contact with Blacks people. The authors concluded that prejudice was more likely to occur with White than with Black youngsters.

McClelland and Auster (1990) studied attitudes toward interracial relationships by Whites and Blacks. Participants were from an Ivy League college. The survey asked students' opinions about race relations and interracial dating. Participants answered questions about their frequency of attending school functions with other races, whether they had friends that were of a different race, and whether they had dated interracially. The survey also examined the acceptance of being roommates with or married to a person of another race. Results showed that 75% of Blacks and 29% of Whites attended parties with another race. Blacks were less likely than Whites to report friendly contact with another race, and they were more likely to report discrimination. However, Blacks were almost three times as likely as Whites to become seriously involved or to marry a person of another race. Forty-nine percent of Whites expressed mixed feelings and discomfort toward interracial dating and marriage. Whites were willing to accept others' dating a person of another race but would not do so themselves. When White participants specified whom of another race they would marry, approximately 50% of the participants chose Asians, 25% chose Hispanics, and 20% chose Blacks. The authors concluded prejudice was still evident and continued to occur on college campuses.

Not only were students from predominately White schools studied, but Todd, McKinney, Harris, Chadderton, and Small (1992) investigated attitudes toward interracial dating in an ethnic-diverse community. Participants completed a self-rating scale and a questionnaire of attitudes. Results showed that 61% of participants reported they were willing to date outside their ethnic group. The younger participants, under age 40, were significantly more positive about interracial dating than were older participants over age 40. Men showed a sig-

Gloria Lawrence from Wayne State College was the faculty sponsor for this research project.

nificantly more positive attitude toward interracial dating than did women. The authors concluded that the majority of their participants had positive attitudes toward interracial dating; they suggested that positive race relations were increasing.

Donscheski (1995) studied attitudes toward interracial relationships among college students from a small, rural, mostly White state college. Participants viewed photographs of a Black man and a White woman, or a White man and the same White woman. To avoid bias based on appearance, all individuals in the photographs wore the same clothing; they had the same facial expression and the same body build. Participants completed a questionnaire in which they rated the compatibility of the couples in the photographs. Students rated the White couple as more compatible than the mixed race couple.

The purpose of the present study was to extend the previous research (Donscheski, 1995) by using pictures of Black, Hispanic, and White men and women. The hypothesis was that attitudes about couple compatibility between interracial couples would be more negative than between same race couples.

Method

Participants

Participants were 50 female and 31 male college students from general psychology classes at Wayne State College. Students volunteered to be participants, and they received academic extra credit for participating. All participants were Caucasian; 79% of them were from towns of a population size under 2,000.

Materials

The experimenter developed a 20-item questionnaire that asked about the compatibility between two people in photographs. Examples of items are: "The couple will be openly accepted into each others' families." and "The couple appears to be very comfortable together.". Participants marked a 5-point Likert scale from 1 (*strongly agree*) to 5 (*strongly disagree*). The most negative answer was assigned a score of five. A totally negative score on the questionnaire would have been 100.

The six, 10 x 12.5 cm photographs were individual pictures of a White, Black, or Hispanic man or woman. All individuals in the photographs wore the same clothing, had the same body build, the same facial expression, were of similar age, and were not students from Wayne State College. The same gray background was used. Nine combinations of pictures were Black woman/Black man, Black woman/White man, Black woman/Hispanic man, White woman/Black man, White woman/White man, White woman/Hispanic man, Hispanic woman/Black man, Hispanic woman/White man, or Hispanic woman/Hispanic man. Before the experiment began, 10 college students, who were not participants in the study, rated the photographs for attractiveness. All pictures were rated similarly, (M = 3.12, SD = 1.08).

Procedure

Participants signed informed consent forms and were randomly assigned to groups according to the combinations of pictures they would view. The photographs were attached to the questionnaires, which participants answered within five min. At the end of the experiment, participants were told the experiment's purpose and hypothesis.

Results

A 3 x 3 (Male Race Photographs x Female Race Photographs) independent groups analysis of variance was conducted; post-hoc t-tests were conducted on significant results. The relevant finding was a significant interaction, F (4,72) = 14.032, p < .001 between male race photographs and female race photographs. Participants were significantly more positive toward the couple when the White man was paired with the White woman, *t*s (16) > 2.5, *p*s <.05. Moreover the White woman with Black or Hispanic man was rated more negatively than any other couple, *t*s (16) > 3.0, *p*s < .05. Results are depicted in Figure 1.

Discussion

Participants in the present study were significantly more positive about the compatibility of the White man/White woman couple than any other couple. The results partially supported the hypothesis that attitudes toward interracial relationships would be negative.

Results lent support to findings by McClelland and Auster (1990) of racial prejudice among college students and to results from Moore et al. (1984) of racial prejudice in school age children. The present results also supported Donscheski's findings (1995) that students viewed interracial relationships (White/Black) more negatively than same-race (White/White) relationships.

The results of the present study agreed somewhat with those of Todd et al. (1992), who concluded positive race relations are increasing. Mean scores of couples' compatibility (higher scores reflect less perceived compatibility) ranged from 52-66 for all combinations except White woman/White man (*M* = 45). Thus, the data indicated that even though the White woman/White man couple was rated to be significantly more compatible, other combinations were not completely incompatible.

The populations of participants' hometowns may have limited the external validity of the results. Because 79% of the participants came from towns with populations of less than 2,000 people, participants had few opportunities to interact with people of other races. As Carter (1990) found, the higher the contact with other races the less likely there were racist attitudes.

Future studies might use photographs of additional ethnic groups, such as Asian Americans. Research reports on racial attitudes were difficult to find. Many studies of prejudicial attitudes were conducted in the 1950s-1970s, but more current research is difficult to find. In the limited number of reports, participants were mostly White or Black; interracial attitudes toward Hispanic or Asian groups were not included.

In conclusion, views toward interracial relationships may be becoming more positive. However, additional research is needed. Because interracial relationships are becoming more common, learning to accept those relationships could be a major factor in increasing positive race relations among all races.

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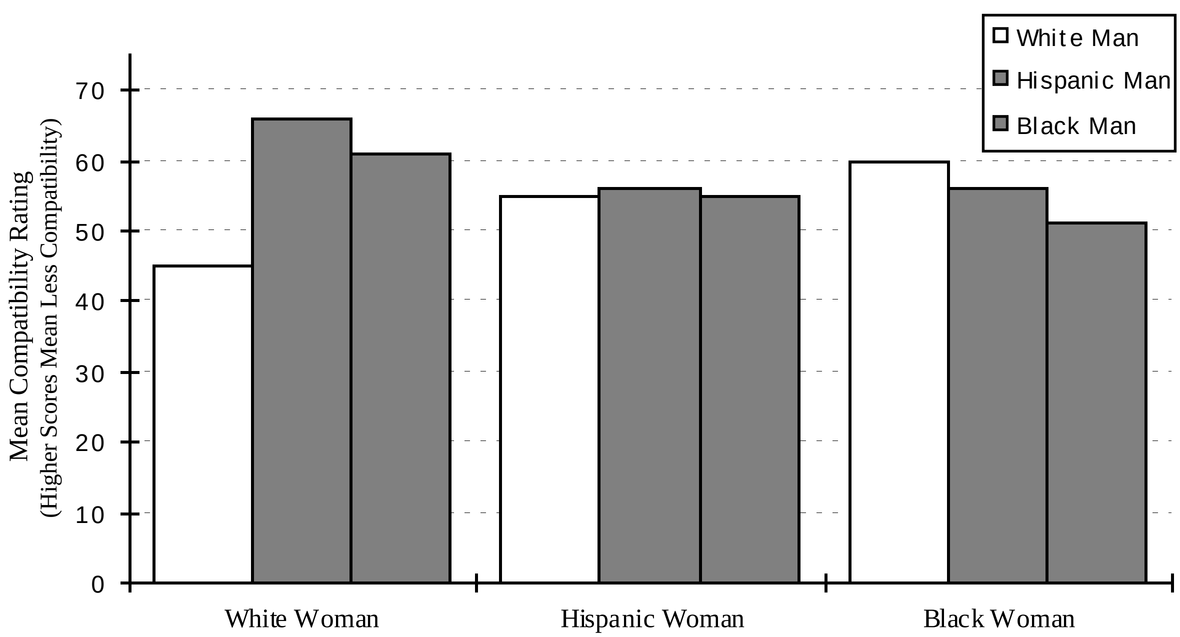

Figure 1. Mean ratings of couples' compatibility.

Effects of Attitude, Personality, and Value Similarity on Interpersonal Attraction

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Research efforts have attempted to identify factors that lead to interpersonal attraction. From the literature, attitude, personality, and value similarity have emerged as factors most positively correlated with interpersonal attraction. I will present evidence in support of and in contradiction to the hypothesis that attitude, personality, and value similarity predict interpersonal attraction. The results, however, are mixed because none of the factors have been conclusively found to support or contradict the hypothesis. Following the review, I made suggestions to improve the quality of future research.

According to Allport (1937), personality "is a dynamic organization within the individual of those psychophysical systems that determine his unique adjustments to his environment" (p. 48). However, such views do not address the question of what personality traits lead to interpersonal attraction. What causes two people to be attractive to each other? Although personality traits (e.g., extroversion, agreeableness, and empathy) may contribute to interpersonal attraction, the present literature review examines the degree of similarity in attitudes, personality, and values as variables that determine interpersonal attraction between two individuals.

Many studies have assessed the factors that influence both friendship choice and the development of personal relationships (Neimeyer & Mitchell, 1988). Investigators have identified a variety of variables affecting friendship choice and the development of personal relationships (e.g., propinquity (Baron & Byrne, 1981), need for affiliation (Latane & Bidwell, 1977), common activity preferences (Hoffman & Maier, 1966), and physical attraction (Berscheid, 1985). However, a literature review revealed that attitude, personality, and value similarity were the most extensively researched, suggesting these factors are the more likely determinants of interpersonal attraction (Neimeyer & Mitchell, 1988). Longitudinal studies, research reports, and case studies all lend support to the theory of similarity (i.e., the more similar two people are in attitude, personality, and values, the more likely they will be attracted to one another). Thus, the purpose of this article was to review the literature concerning the variables of attitude, personality, and value similarity and to determine which, if any, can predict interpersonal attraction. I cited studies supporting and contradicting the role of attitudes, personality, and value similarity in determining interpersonal attraction.

Attitude Similarity

Support for a positive linear relationship between attitude similarity and interpersonal attraction has been so prevalent that some authors have termed it a "law of attraction" (LaPrelle, Hoyle, Insko & Bernthal, 1990, p. 217). Studies involving male and female college students as well as children, adolescents, and adults living in both the United States and abroad have confirmed this relationship.

The results from Byrne's study (as cited in Neimeyer & Mitchell, 1988) supports the claim of a positive relationship between attitude similarity and attraction. Baron & Byrne (1981) defined attitudes as personal likes versus dislikes with respect to movies, music, teachers, food, and other such topics of interest that serve as discriminating stimuli between individuals. Byrne used his Survey of Attitudes questionnaire to assess the attraction between an individual and a bogus stranger. A linear function of the proportion of reinforcements from similar attitudes between persons seems to best explain the attraction to a stranger. However, beyond the aspect of attitudes, confounding factors and inconsistency damage the similarity-attraction relationship. For example, in a naturalistic setting, where more information is available about the other person, the similarity-attraction relationship has more limited effects according to Broome (1983).

Other studies have found a less positive relationship between attitude similarity and interpersonal attractions. In one study, researchers assessed the attitudes of same-sex university students. Sunnafrank and Miller (1981) used a dichotomous measure of student attitudes toward selected topics and discovered that attitude similarity played a significant role in attraction ratings for non-interacting pairs (i.e., those who judged their assigned partner on the basis of questionnaire results alone).

Mark E. Ware from Creighton University was the faculty sponsor for this research project.

However, when the pairs of individuals who were attitudinally similar and dissimilar were allowed an opportunity to partake in five minute social interactions before completion of attractiveness ratings, “no differences in attraction were observed among similar and dissimilar interactants” (Sunnafrank & Miller, 1981, p. 16). According to Broome (1983), the results of this study are consistent with the “uncertainty reduction theory” (i.e., interpersonal uncertainty, rather than dissimilarity per se, is aversive). Thus, attitude similarity simply seems to be one source of uncertainty-reducing information and is only indirectly relevant to attraction (Neimeyer & Mitchell, 1988).

To test the uncertainty reduction theory, Broome (1983) created a bogus stranger with attitudes that were mainly different than those of the subject population and measured the reactions of both male and female college students. As the theory hypothesizes, information about the personality of and/or interaction with the dissimilar other served as a buffer for the effects of attitude dissimilarity. Within situations where such an opportunity existed, interpersonal attraction increased (Broome, 1983).

Researchers who have employed the use of a bogus stranger (Baron & Byrne, 1981; Broome, 1983) have consistently found attitude similarity positively correlated with interpersonal attraction (Neimeyer & Mitchell, 1988). However, when individuals are exposed to an interactive episode, the effects of similarity only seem to be positively correlated with interpersonal attraction as time progresses. Because the correlation was not analyzed longitudinally, the correlation should be accepted with caution (Neimeyer & Mitchell, 1988).

In summary, attitude similarity may be a predictor of interpersonal attraction. Before drawing such a conclusion, however, we must wait for researchers to find a positive correlation between interpersonal attraction and attitude similarity with interacting dyads in natural settings; existing literature fails to contain those criteria. Adequate laboratory and field research does not currently exist.

Personality Similarity

Like attitude similarity, writers have hypothesized that similarity among personality characteristics should be an accurate predictor of interpersonal attraction. Unlike attitudes however, personality (i.e., a person’s distinctive traits or qualities) has been considered more stable and comprehensive. Researchers can assess personality with many established and well-validated personality instruments. In one longitudinal study, Duck and Craig (1978) thought that individuals would seek different types of personality similarity at different stages in a relationship with another person. More specifically, the authors hypothesized that similarity among newly acquainted friends would be on the basis of relatively accessible information (e.g., face-to-face social behavior), whereas similarity among long-term friends would be in terms of less accessible, but more fundamental, personality information (e.g., more personal and deeply held characteristics). To test this hypothesis, 40 unacquainted individuals in college residence halls interacted with one another over eight months and completed three measures of personality (i.e., California Psychological Inventory, Allport-Vernon Study of Values, and the Kelly Repertory Grid) at one, three, and eight months after their initial meeting. The results supported the contention that different types of personality similarity account for choices in friendship formation at different periods in time. Thus, personality similarity seems to be positively correlated with the development of friendship.

However, other research has found contradictory evidence. Hoffman and Maier (1966) asserted that members of a group with similar personalities showed an equal amount of attraction to their group as members of groups with dissimilar personalities. In an effort to test this assertion, the authors compared two groups (i.e., similar and dissimilar personalities, as measured by the Guilford-Zimmerman Temperament Survey) for their attractiveness to members of their groups at the fifth, eighth, and eleventh week. The findings supported their hypothesis; there was no evidence that group members with similar personalities were more attracted to each other than those group members with dissimilar personalities.

The literature concerning personality similarity and its relationship to interpersonal attraction is inconsistent. Although several studies support a positive correlation (Duck & Craig, 1978), others do not (Hoffman & Maier, 1966). In addition, researchers use different personality measures, and there is no evidence to support the comparison of these separate measurements (e.g., California Psychological Inventory, Allport-Vernon Study of Values, Kelly Repertory Grid, and Guilford-Zimmerman Temperament Survey).

Value Similarity

Values are theoretical, economic, aesthetic, social, political, and religious aspects of life that one deems important, and values set a precedent for how an individual leads his or her life (Neimeyer & Mitchell, 1988). Investigators have hypothesized that similarity of values is positively correlated with interpersonal attraction. However, values, unlike attitude and personality similarity, are instrumental in the development of one's personal philosophy. An individual's behavior is directly or indirectly influenced by his or her moral standards. Thus, values are extremely broad and can have far-reaching consequences.

In a study of the adult population in the United States, similarity of values seems to be positively correlated with friendship (Johnson, 1989). Other variables consistently related to friendship include personableness and similarity with respect to financial status, leisure activities, level of formal education, marital status, and membership in the same social group (Johnson, 1989). Through analysis of respondents' descriptions of what attracted them to a particular person, participants reported a stronger influence for similarity than dissimilarity. These data illustrate the greater influence of assumed similarity by the respondent versus actual similarity between the respondent and the friend. To assess similarity from a more comprehensive perspective, future research must distinguish between the two types of similarity.

A study conducted by Newcomb (1961) showed that pre-acquaintance value similarity was positively correlated with subsequent attraction. With regard to Spranger's (1928) six value categories (theoretical, economic, aesthetic, social, political, and religious), Newcomb discovered that high levels of pre-acquaintance agreement significantly predicted interpersonal attraction after 13 weeks of interaction. However, the effect of value similarity may change as time progresses because some studies (Duck & Craig, 1978; Berg, 1984) found that congruence of values, which is substantial in friendship formation, is not in later phases of personal relationships.

In conclusion, value similarity seems to be positively correlated with interpersonal attraction, however future research must distinguish among the stages in which value congruence has an impact. In addition, researchers must clearly distinguish among attitudes, personality, and values when analyzing variables that contribute to friendship formation. Although some investigators (Newcomb, 1961) conceptualize attitudes, personality, and values as distinct from one another, others (Baron & Byrne, 1981) fail to make such sharp distinctions. Thus, one must empirically distinguish among attitudes, personality, and values.

Discussion

Critique of Literature

A review of literature revealed several deficiencies. First, there were an insufficient number of articles concerned with attitudes, personality, and values. There were some comprehensive articles, but most examined superficial aspects of interpersonal attraction. For example, I discovered many articles regarding income (Desrochers, 1995), occupational status (Johnson, 1989), courtly love (Rechtien & Fiedler, 1989), and clothing (Kaiser, 1989). Researchers should investigate factors hypothesized to be positively correlated with interpersonal attraction, instead of simply discussing the superficial aspects.

Second, investigators must distinguish more clearly among attitudes, personality, and values. Many times authors failed to provide consistent definitions. For example, according to Neimeyer and Mitchell (1988), personality "refers to the distinctive traits or qualities of a person, considered collectively" (p. 134) whereas Duck and Craig (1978) stated that "any fairly consistent aspect of behavior which discriminates amongst people could be regarded as a 'personality indicator'" (p. 237). Therefore, more consensus about definition of terms would produce more effective and efficient research.

Finally, the existing research was overwhelmingly concerned with correlational relationships. For example, Johnson's study (1989), made no attempt to establish causality. Correlations between friendship and such factors as income, occupational status, and having or not having children were discussed instead. As scientific practitioners, an assertion about causality is much more effective in providing applicability. In addition, because applicability is the goal of most research efforts, establishing a causal relationship should have a higher priority. Future research should use unacquainted people and manipulate attitudes, personality, and values. Instead of simply knowing that two variables are associated, one would know the reasons for the relationship.

Summary

Many investigators have tried to identify variables associated with interpersonal attraction. From such research, authors have concluded that attitude, personality, and value similarity are prominent variables influencing interpersonal attraction.

Attitude similarity seems to be positively correlated with interpersonal attraction in studies that used a bogus stranger (Baron & Byrne, 1981; Broome, 1983). However, investigators (Sunnafrank & Miller, 1981) failed to find a positive correlation between interpersonal attraction and attitude similarity between interacting persons in naturalistic settings. As a result, the initial findings that supported a positive correlation between attitude similarity and interpersonal attraction should be accepted with caution until more research is conducted to address the limited amount of evidence about the role naturalistic settings.

The literature concerning personality similarity is also inconsistent. Duck and Craig (1978) conducted a study to test their hypothesis that individuals seek different types of personality similarity at different stages in a relationship. Although personality similarity seems to be positively correlated to interpersonal attraction in this instance (Duck & Craig, 1978), another study (Hoffman & Maier, 1966) found no evidence that group members with similar personalities were more attracted to each other than those group members with dissimilar personalities. Thus, researchers need to use uniform personality measures.

With respect to value similarity, the data are also inconsistent. Although Johnson (1989) found similarity of values positively correlated with friendship, a discrepancy existed between assumed and actual similarity. Assumed similarity seems to influence friendship choice more than actual similarity. Also, Newcomb (1961) discovered that the effect of value similarity may change over time. Congruence of values seems to be substantial early in friendship formation, but not in later phases of the personal relationship (Duck & Craig, 1978; Berg, 1984). Value similarity may play a significant role in interpersonal attraction, however, future research must decipher among the stages in a relationship in which value congruence has an impact.

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Special Features

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This issue's Special Features section addresses four topics that should be of interest to both students and teachers of psychology. Last year's "Call for Papers" invited students to describe the processes and pitfalls involved in applying to graduate school. Amy Wolverton provides advice for gaining admission to graduate school, as well as ways for choosing the right school to attend.

The second topic consists of psychological analyses of a movie and a television show—this theme is also the topic in this year's "Call for Papers" (p. 55). Kathryn Sutko uses social learning theory to critique an episode of the television show Growing Pains. Shannon Marlatt describes how effective techniques of persuasion, group-think, and conformity pressures can be used to understand events in the film 12 Angry Men. We invite you to review these articles in preparing your submission for the next issue of the Journal of Psychological Inquiry.

The third topic examines undergraduate research. Dr. Wilbert McKeachie, Professor Emeritus at the University of Michigan, author of the well-known book Teaching Tips, and a highly respected consultant on teaching issues, talks about undergraduate student research and the research process in general. He provides insights into why the research process can be compelling and reflects on its value in promoting critical thinking.

The final topic informs readers about the process of getting their manuscripts published. Dr. Randolph Smith is the editor of the journal Teaching of Psychology. He offers many suggestions for how to prepare manuscripts for publication. Of particular interest are his comments about how to respond to reviewers' concerns in revising a paper that is "rejected with an invitation to resubmit" or "accepted pending revision." Read this article and discover an insider's perspective about the review process.

Advice on Applying to Graduate School

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Applying to graduate schools is not an easy undertaking. There is no step-by-step process nor sure-fire way to guarantee admission. However, there are experiences that you may have as an undergraduate that will enhance your chances for getting into a program. I will describe a few of my insights that might assist you in choosing the best program once you have been accepted.

First, visiting potential programs can be very important. What may look good in a pamphlet or brochure may not be as appealing in person. For example, after reading about one program that I thought sounded excellent, I visited the campus. I was extremely disappointed in the facilities and what the program offered. On the other hand, another school that appeared mediocre on paper was extremely impressive once I visited the campus and was able to evaluate the resources first-hand.

A personal interview at the school assures you of an opportunity to meet faculty, students, and support staff as well as see the buildings, campus, and potential living arrangements. Meeting with the staff at each of the schools gave me a significant advantage. I was able to meet people with whom I would be working. During one visit, I met a particular faculty member who took an interest in my research area and indicated that he would love to work with me on developing more research in that area. Being able to meet him not only convinced me that he was sincerely interested in me as a student but also impressed me with the extent to which that program seemed to be invested in their students. Remember, there may be dozens of students applying to the same program, students with the same or higher GRE scores and GPAs than yours. Although schools may not outwardly admit it, I believe that they give more consideration to students they have met.

Richard Miller is editor of this journal's Special Features section.

While you are visiting a school, talk to a professional within your area of interest who can give subjective feedback about the program and the services it offers. Choosing a school may seem like an overwhelming task; an experienced professional can give you insights to help make a wise choice.

As a consequence of completing the interview process, I found that there were several experiences during my undergraduate years that gave me a significant advantage compared to other applicants. The first was an internship. Internships provide hands-on experience for psychology-related positions. In my case, I will be attending graduate school in school psychology. During my internship, I shadowed a school psychologist and took part in consultations, educational testing, intervention, and prevention programs.

A second advantage was my research experience. Throughout my junior and senior years, I designed a study, completed a literature review, recruited subjects, analyzed data, and presented the results of my research at a conference. Although your research experience need not be as intensive as mine, all such experiences develop and practice scientific skills. These skills are important because research is a part of most graduate programs in psychology, and graduate faculty view more favorably those applicants with prior research experience. The advantages for my preparations were offers of research assistantships from every school to which I applied. The research assistantships I was offered covered full tuition and a monthly stipend. Thus, the time and energy invested during one's undergraduate years can be extremely beneficial.

Another area worth the investment of your time is service within psychology. There are many opportunities for service-related activities both within and outside of a department. In many departments, students can be teaching assistants, graders, psychology club members, or Psi Chi members. For example, I was a teaching assistant, which required me to spend approximately 10-12 hrs/week on a variety of teaching-related tasks. As a teaching assistant, I gained experience grading, instructing, consulting about course work, and assisting in teaching. These experiences also gave me advantages when applying for graduate assistantships.

Outside of the department, you can be a peer educator/mentor, take part in philanthropic projects, or volunteer at a nearby mental hospital. Positions such as those give you advantages compared to applicants without the experience because such accomplishments assure graduate programs that they will not be wasting their money if they provide financial support. Additionally, these areas of service allow students to gain additional insights that are unavailable in the classroom and thus help to form a more well-rounded, involved individual.

One last point of advice. Take your time! The decision deadlines for APA-approved programs are not until April 15th of each year. Although schools may pressure you to decide sooner, do not make a hasty decision because the decision is an important one. Academic experiences are not the only ones that determine admission to a program. What one does outside of the classroom contributes to the type of person that graduate programs are seeking.

Learning Perspectives Applied to a Television Sitcom

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On Monday, November 30, 1998, I watched a syndicated episode of *Growing Pains* on the Disney Channel, searching for scenes illustrating concepts from learning and social-cognitive learning perspectives of personality. I was amazed at the ease in finding examples. The storyline was that Mike, a 20 year-old, first-born son, who is very irresponsible and immature, finally got a job. The job consisted of teaching acting classes. In his class, there was a 12-year-old boy named Luke, who Mike discovered was homeless. Mike brought Luke to his parents' home, the Seavers, and thought that Luke would be able to live with his family.

Without Luke present, Mike discussed his idea with his parents. They said, "Luke absolutely cannot stay here. We do not know his history. He is a stranger. We have other children about whom we need to be concerned." When his parents prepared to tell Luke that he would not be able to live with them, they discovered in a face-to-face meeting that they could not refuse the request and invited him to stay. Within days, the parents discovered they were missing more than 15 bottles of wine.

When the parents confronted Luke about the missing wine, they discovered that Luke's father died because of alcohol-related illnesses and that Luke's mother remarried an alcoholic who physically and mentally abused Luke. Luke's mother had recently died, and he had run away from home to escape the beatings. When Luke discovered that Mr. Seaver liked to have an occasional glass of wine with dinner, he feared that Mr. Seaver would behave as his father and step-father. He did not want this transformation to occur, so he took it upon himself to pour all the alcohol down the drain.

Examples Empathy and Altruism

Social learning theory emphasizes learning and relies on interaction with, or influence of, other people. Social-learning theories frequently use the term vicarious emotional arousal—empathy—which is the tendency to experience someone else's feelings. Empathy creates opportunities for vicarious classical conditioning. This episode of *Growing Pains* provided a perfect example of negative vicarious arousal. When Mike discussed allowing Luke to live in the Seaver household, his parents adamantly refuse when Luke was not present. They said, "We feel for him." "We understand." "We sympathize, but he cannot stay with us." When the Seavers saw Luke face-to-face, they were influenced by his presence and invited him to stay as long as necessary to find an appropriate foster family. A social psychologist might explain their behavior as influenced by their close proximity to Luke. They were more directly affected by vicarious emotional arousal because they were face-to-face with Luke.

Observational and Cognitive-Social Learning

Many scenes in *Growing Pain*s depicted social learning. The Seavers conveyed their awareness of the power of social learning when they said to Mike, "Like it or not, Luke will have an influence on Ben and Crissy"—their two youngest children. That prophecy came true. Crissy exhibited observational learning when she started to walk and talk like Luke. Cognitive learning was illustrated in a scene in which Luke explained to Ben how to sneak into a movie theater without purchasing a ticket—by saying that he had left his wallet in the theater. Ben tried the strategy and got caught!

Acquisition versus Performance

One social learning theorist, Albert Bandura, clearly distinguished between acquisition and performance in his 1965 Bobo doll study. This *Growing Pains* episode provided an example demonstrating that acquisition does not always equal performance. As stated earlier, Mike was characterized as irresponsible, immature, unreliable, lazy, and selfish, but suddenly he became what his mother called "mature, responsible, and caring." That he had a sudden transformation is very unlikely. More likely, he had learned previously how to be a responsible, mature, and hard-working adult, but he had chosen not to behave as such. He had probably observed his mature, responsible, and caring parents. Perhaps, he decided to perform those behaviors once he saw his role as Luke's caretaker, similar to his parents' role for him. Thus, even though a behavior is learned, it need not be performed.

Instrumental Conditioning

Most psychologists refer to one type of instrumental conditioning as learning in which a behavior is more likely to occur when it is followed by a desirable event, called a reinforcer. In social learning, such events are called social reinforcers. They include such things as acceptance, smiles, hugs, praise, approval, interest, and attention. The *Growing Pains* episode provided an example of social instrumental conditioning. Luke told members of the Seaver family incredible and untrue stories about himself. He told Ben that he used to work with his dad as a lumberjack deep in the mountains. He told Mike that he worked with airplane pilots in South Dakota. To Carol, he said that he previously worked on a sugar plantation in the Caribbean. And he told Mrs. Seaver that he worked at a dude ranch in Wyoming.

Luke may have told these stories because they elicited dramatic responses. The Seavers' reactions made him feel good. They instrumentally conditioned him by saying such things as, "Wow!" "How incredible!" "How great!" They reinforced him each time he told one of those outrageous stories.

Generalization

Learning often includes generalization and discrimination. Discrimination involves responding in different ways to different stimuli, whereas generalization involves responding in similar ways to stimuli that are similar to a conditioned stimulus. Evidence for generalization was present in this episode of *Growing Pains.* Luke saw what alcohol did to both his father and his step-father, and he extended his experience to Mr. Seaver, who only drank in moderation. Luke's generalization helped to understand his behavior of ridding the Seavers' household of all its alcohol.

Conclusion

One 30 min, syndicated episode of a situation comedy contained many examples of concepts from learning and cognitive-social learning theory, including empathy, observational learning, and generalization. Television viewing need not be a passive nor mindless process but rather can serve to illustrate and reinforce some of psychology's fundamental concepts.

12 Angry Men: Applying Techniques of Persuasion

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The movie, *12 Angry Men* (Fonda, Rose, & Lumet, 1957), staring Henry Fonda is a story about a group of jurors who must come to a verdict on what seems to be an open and shut murder case. In the jury's first vote, the verdict was 11-1 in favor of conviction. The single, not guilty vote belonged to Fonda's character. He was not convinced beyond a reasonable doubt that the accused was guilty and refused to vote for conviction. Fonda took on the task of implanting doubt in the other jurors' minds to help prove that the man was innocent. There are many illustrations of social psychological concepts in the film, including conformity, prejudice, group decision making, and persuasion. Fonda's character displayed these concepts and used them to change the other jurors' decision.

There is strong evidence for conformity in this film. The other characters made Fonda's character very uncomfortable emotionally. They complained and ranted that he was not cooperative. This behavior put pressure on Fonda to conform to the group consensus. To combat this pressure, he had to have confidence in himself and in his unique decision so that he would not submit to the pressures of the group. As Moscovici (1985) demonstrated, the minority can influence the majority when it stakes out a consistent, unwavering position, exhibits self-confidence in that position, and demonstrates that unanimity of opinion is an illusion.

Fonda's method used the central (vs. peripheral) route to persuasion (Petty & Cacioppo, 1986). With this method, Fonda's character identified flaws in the case that caused the other jurors to think. He marshaled systematic arguments to stimulate favorable thinking. When the other jurors discussed his arguments, they began to brainstorm and found other flaws in the trial.

Fonda was a very effective communicator. He was quite, calm, and meticulous in his persuasive technique. He did not present his argument in an aggressive manner. His method encouraged jurors to think and to find inconsistencies in their own arguments.

At the beginning of the film, Fonda's character did not appear to be a credible person. His actions suggested isolation, for example, when he stood away from the group and did not instigate conversation.

Subsequently, he became much more credible in the eyes of the jurors. As Wiegman (1985) showed, credibility enhances one's ability to persuade. When Fonda's character produced a knife similar to the murder weapon, correlated the sound of the falling body with the noise of the train, and timed how long it would have taken the old man to get to the door, these actions created an appearance of expertise. With this expertise, Fonda became more trustworthy to the jurors. Because he seemed to know what he was talking about, the other jurors were much more willing to admit their own doubts and slowly moved toward a finding of not guilty.

In trying to convince the other jurors that there was not sufficient evidence to convict the defendant, Fonda's character used several persuasive techniques. His main method was reason, punctuated with emotion at appropriate times. As mentioned before, he used simple logic and reasoning in presenting the argument about the knife, train, and the old man.

He only used emotion when one of the jurors tried to engage him in a fight. Fonda responded to the provocation by calling the juror a sadist. The juror threatened to kill him. This outburst supported Fonda's point that sometimes people speak but with no intention to act on the words. Emotional appeals can enhance one's arguments (Cacioppo, Petty, & Morris, 1983), especially when the audience is not well-educated or analytical, as was the case with this jury.

Prior to Fonda's attempts to change the jury's decision, many members of the jury exhibited behaviors typical of groupthink; conformity pressure, illusion of unanimity, rationalization and a stereotyped view of the defendant (Janis, 1982). As Fonda argued with the jurors, symptoms of groupthink slowly dissolved. Group members started arguing among themselves and caused turmoil. Therefore, there was less conformity pressure, self censorship, and illusions of unanimity. Slowly, members of the jury were persuaded that there was a possibility that the accused might not be guilty.

One juror, who maintained a guilty verdict, held a stereotype about people who lived in slums. He believed that because the accused was from a slum he was no good and his nature was to kill. This stereotype exhibited prejudice towards the accused, and the juror simply wanted him punished because of his origins, regardless of his guilt. As Allport (1954) pointed out, negative stereotypes are very resistant to contradictory evidence.

At the end of the movie, the jury acquitted the man. Fonda's character was successful in persuading the other jurists by breaking down groupthink and personal prejudices. He also helped them learn to use rational processes in decision making. All of the jurors left the court as better people than they were at the beginning of the movie.

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A Conversation with Wilbert J. McKeachie: Involving Undergraduate Students in Research

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Wilbert J. McKeachie is this country's foremost teacher of teachers. His book, Teaching Tips *(McKeachie, 1999), now in its tenth edition, has become the standard reference work for new college teachers. Bill was born in Clarkston, Michigan in 1921. He began his college education at Michigan State Normal College with the intention of becoming a high school teacher.*

After service as a radio communications officer in the U.S. Navy, Bill entered the graduate program in psychology at the University of Michigan where he received a PhD in 1949. His association with the Psychology Department at the University of Michigan has continued to this day. Initially, he coordinated the introductory course and began to examine factors that influence learning among college students. For ten years, he served as chair of the department. He has also served as director of the University's Center for Research on Learning and Teaching.

Bill has been active in the American Psychological Association throughout his career, serving as President in 1976-77. His considerable contributions to psychology have earned him numerous awards including the American Psychological Foundation's Distinguished Teaching in Psychology Award and American Psychological Assocaition's award for Distinguished Career Contributions to Education and Training in Psychology.

In early October, 1998, Bill delivered the "Clifford L. Fawl Lectures in Psychology" at Nebraska Wesleyan University. During his visit to Nebraska Wesleyan, Bill graciously consented to the following interview with the managing editor (Mark E. Ware) and Special Features editor (Richard L. Miller) of the Journal of Psychological Inquiry. *Also participating in the interview were Clifford L. Fawl and Mary Beth Ahlum, faculty members at Nebraska Wesleyan University.*

Miller: Before we begin, I thought that perhaps a little background on the purpose of this interview might be helpful. The *Journal of Psychological Inquiry* publishes undergraduate student research. In addition, there is a Special Features section that serves a variety of purposes. It is forum for student essays on topical issues and also features, from time to time, articles that provide information of interest to both faculty and students related to the research process. We have asked you for this interview in order to explore your thoughts on the role of undergraduate research in teaching.

Ware: This interview is designed primarily for the audience of students and, secondarily, for faculty, with particular emphasis on the scholarly component of teaching and learning and how that relates to students conducting research and subsequently presenting and publishing the results of that research. To provide a bit of background, the journal grew out of discussions among a group of several of us from Nebraska, Kansas, and the Great Plains area who have been involved with students presenting papers at student conventions. At some point, we began to ask ourselves, "And then what?" The "And then what?" implied taking the manuscript to the next step, following the model of a professional psychologist, you would publish it. And although we don't restrict publication to students who have previously presented their papers at conferences, we had originally envisioned the journal as another step in the evolution of increasing the quality of the work students had done. So, that's the context in which we wanted to talk with you.

Early Years

Miller: To begin, I would like you to think back a bit to when you were a student. What motivated you to get involved in scholarship and research?

McKeachie: Well, I suppose my involvement in research began during my first year as a teaching assistant, which was my second year of graduate school. I'd come out of the Navy (Ed.: at the

… research began during my first year as a teaching assistant … we would talk about teaching.

end of World War II) and taken some undergraduate and some graduate courses for the first year, and after that the returning veterans began flocking in. I'd gotten out of the Navy early because after the war was over they let us out in terms of the amount of combat we'd had. I'd had a lot of combat so I got out in time for the fall term of 1945.

By the next year, our department was swamped with students who were veterans. Don Marquis was the new chair, and he asked me to be a teaching fellow in the introductory psychology course. We felt that students should have a chance to discuss psychology and that we could have discussion sections in the introductory course. The first group of teaching fellows came from a variety of backgrounds. Some were clinicians, and at that time clinical psychology was pretty much either Rogerian (non-directive) or Freudian (psychoanalytic). Some of us were social psychologists (essentially group dynamics-oriented Lewinians), and some were experimental psychologists (behaviorists).

We met once a week with Harold Guetzkow, who was the course coordinator and an assistant professor at the time—later to become a professor at Northwestern University—and we would talk about teaching. Each week, we reviewed the plans for the week and what would be covered in the discussion sessions. Of course, we had different slants on what you ought to be doing based on the theoretical assumptions of each of the perspectives. Harold was a good adjudicator. He would listen to our disagreements and then say, "Whoa, that's an empirical question. Why don't we set up an experiment and find out who's right?" So we set up an experiment, and my stipend was increased from $300 to $500 to coordinate the research. That got me started.

Miller: That would have been a sort of Skinnerian-like incentive approach.

McKeachie: Well, I think it was more interest and curiosity since we each taught in one of three different ways. I think we tried to do a good job by each of the three methods we were using, and it was fascinating to see how it was going to come out, how we could develop measures that would tap the things that we thought ought to be affected.

Ware: Do you remember what some of that early research was like; on what did it focus?

McKeachie: Oh sure, it was part of my first publication (McKeachie, 1951). The behaviorists tended to believe in frequent testing and feedback, or reinforcement, I guess you could call it. I think there were eight of us who were teaching the discussion sections; so in some of the sections we had true-false questions that we would give as a quiz. I think we were teaching it twice a week, so that almost every class period there would be a quiz, and students would answer the quiz and get so many points for it. In class, we would ask really specific questions and actually grade them on their answers to our questions when we would call on the students. That was a sort of behaviorist approach.

The group dynamics people favored discussion, and so, in those eight sections, each of us would bring in general questions and try to encourage all of the students to participate in the discussion. We had course-wide tests, a midterm and a final, and I think we gave essay tests once a month or something like that.

The third method (perhaps favored by the clinicians) was a kind of non-directive approach. We called it a "tutorial." Students were allowed to work individually. Originally we weren't even going to have class. Those who advocated this approach felt that students should be able to work on their own and ask the teacher for help and have the teacher assist them. The dean said, "The students are paying tuition, and they're going to object to paying tuition if they don't have classes, so you've got to meet the students." So we took along a suitcase full of books to each discussion session; books that were all about whatever the topic was. Of course, the students were still getting the lectures, and if there was some demonstration that was appropriate, like demonstrations of Gestalt phenomena or something, we'd all do that in all the sections. But other than that, we would just sit in the back little room, or depending on how it was laid out, maybe the front of the room, and the students came in and studied and did problems in the books, and presumably they'd come up with questions and stuff. It turned out that what they did was to just study two hours a week less than the other students outside of these sections. They'd spend the time in class studying. Essentially, the question we were asking was very analogous to the Lippitt studies of authoritarian, democratic, and laissez-faire leadership (Lippitt & White, 1943).

Ahlum: When you began to develop as a student and knew this was your career, what was your family's reaction? What was the societal reaction to psychologists? I remember a professor of mine who said he was in medical school in the 1950's and that people were aghast that he was studying psychology. Did you experience that at all?

McKeachie: No, I don't think so. My folks were just glad I survived the war. Neither of my parents had a college education. My dad had gone to a short course in agriculture. He was a country school teacher. (Ed.: Country school districts did not require a college degree to teach elementary or high school.) He also went to the Ferris Institute for a summer after the eleventh grade to learn to be a teachert, but my mother only had a ninth grade education. There was certainly no doubt that I was going to college, and so when I went on to graduate school, they were very pleased that I was going, regardless of the field.

Miller: After that beginning, you've obviously had a remarkable scholarly career. What is it that's kept you interested in conducting research?

McKeachie: Well, it's funny. It's because nothing ever comes out right. There were always more things to know. I think that maybe one study I did out of a hundred turned out the way I expected. With all of the others, there was some complication. Things are never as simple as you think. You always end up feeling like you really need to follow up, to do something more, and you're always writing proposals before you've had a chance to analyze all the data from the previous study. It seems as if I can never get it finished. And you have students who have ideas, and you want to work with them. It's the same way now. I still have my research group going, and we're talking about what we're going to do next year.

> [Reasons for interest in conducting research]
>
> … *because nothing ever comes out right* … [and] *there were always more things to know.*

Miller: How do you feel when you do get one finished? Is there a great sense of accomplishment and relief, or is it, well, let's keep moving?

McKeachie: Well, I don't know. There's certainly a sense of accomplishment. You get it written up, and it always gets rejected at first. Not rejected outright but sent back for revision and resubmission. So, yeah, certainly it's nice to get things done and see them in print. I read some of it, and I'm like, "Yeah, that's pretty good stuff!" It really sometimes looks better in print than it did as a manuscript.

Ware: How about handling those rejections or even the necessity for revision? Students, for example, can be very discouraged by getting back a review that says, "More work is needed." How about yourself?

McKeachie: Well sure, it's frustrating, especially if it's a research proposal, and it's pretty good. Personally, I sometimes think that the reviewers didn't understand at all what was important, but most of the time the suggestions are good, and if it's outright rejected then there's always another journal. Usually, if it's rejected, I think sure, this isn't earth shaking. Most of the things I publish aren't earth shaking. I think some people would be interested, so I'll send it to a journal that doesn't have such strict standards. You find a lot of publications that—if you just stuck to the really important journals—probably wouldn't get published at all.

Involving Students in Research

Miller: In the *Journal of Psychological Inquiry*, we publish both literature reviews as well as the empirical articles and historical pieces. What would you see are the advantages for undergraduate students engaging in each of those types of scholarly endeavors?

McKeachie: Well, I think they're all important. My mentor, Don Marquis, said, "You don't need to study history of psychology. Anything that's important is going to be in today's literature." So, at Michigan, we never had a history of psychology course until I was chair, I think, and, actually, when I taught honors, I started with Plato, and then I came up through Locke and Hume and so forth. It wasn't until later that I realized that there were a lot of bright people who for many years past had good ideas. William James had a lot.

Every once in a while, one of my students will discover William James as they read in the library. And they're impressed. He was a pretty smart man. And so, of course, one of the bad features of being my age is when a student comes to me with a "new idea". I remember that so and so did that back in the late forties or late fifties. One of the graduate students in my research group is planning to do his dissertation work on press—academic press. I said, that's great. I haven't heard that term since Henry Murray, and I sent him back to look at what Murray said about need press. But I'm not sure that the people my student was working with realized that the term had developed that far back. You keep files in your mind on all of that, and, you know, it's really kind of depressing to remember that we did something 20 years ago, or somebody did that 30 years ago. It's not really healthy. On the other hand, I think it's useful for people to at least be aware of the history of ideas.

I was reading an article recently or maybe reviewing one for a journal that cited Vygotsky who is now the big thing in educational psychology. It was quite clear that the authors of the article thought Vygotsky was contemporary, as they were referring to a 1982 publication and didn't realize that the material was about 60 years old.

Miller: What about your own experience involving undergraduates in research? Tell us a little about that.

McKeachie: Actually, it started my first year of teaching, in a way. I was in charge of the experimental psychology course with a laboratory, and Roger Brown, who later taught at Harvard, was one of my TA's. Traditionally, it was like a chemistry lab. You had a study each week. We did the Purkinje phenomenon, rods and cones, and some such classic demonstration each week. In the last third of the term, the students would devise their own experiments in which they would collect data themselves.

And then in summer of 1951, I went to Cornell to work with a group chaired by the head of the APA, Dael Wolfle, to work on a model psychology curriculum (Buxton, Cofer, Gustad, MacLeod, McKeachie, & Wolfle, 1952). We argued that instead of a conventional experimental psychology lab, the undergraduate curriculum should include labs on motivation, perception, and action. So we instituted that curriculum at Michigan.

I was only an assistant professor, but I was the chair of the undergraduate committee. So I was able to put the changes into effect. And one of the things we did in those labs was to have students carry out some research. At various times, I taught the courses with labs in motivation and perception. I taught the human learning course.

Now I teach the introductory course, and my students have just finished what we call mini-experiments. This is something where in groups of roughly 3, the students actually analyzed some data. They had the choice of about three things that we could provide data on. And it's amazing. It's not large scale research, and if the study is on fellow students, we don't worry about statistical significance. The students can do an observational study if it's not intrusive or taking other people's time. If they are going to involve people outside the class, they have to go through the regular review procedures.

The students come up with really interesting research projects—as good as the majors did when I was teaching the majors in junior/senior classes. You get three bright students together, and they can come up with some really interesting research. And then we have a little APA Day on a Saturday toward the end of the term, where they present their papers. They have to turn in written reports as well. So they have to do the review of the literature, since I think that a literature review is good in giving students a sense that they know more about some area than anybody else, maybe even more than the professor does. I think that's important in building a sense that the student can master a body of information about something and that they've got something that other people don't have.

I think [undergraduate research is] *important in building a sense that the student can master a body of information … and that they've got something that other people don't have.*

Of course the skills of conducting a literature review are important as well. One of the things you hope is that when they get out of college, that they'll have the ability to ask psychological questions. Maybe their grandmother or grandfather develops Alzheimer's disease, or they've got a child who's having a problem in school, or they don't agree with the intelligence tests that has been given, or something. I hope that they are now able to go to the library or the World Wide Web and get information.

So I think that learning how to review the literature is an important thing, but I think that to actually carry out some research has unique benefits beyond historical review, and we do require the literature review as part of the research paper that our students write. The projects are not as big as you have for a senior student, but nonetheless, they've got to go to the library and find some journals and see what other people have done.

What you hope is that—and I think there's some evidence that this occurs for our majors—they will learn to ask, "What is the evidence?" and I hope to get this started among our freshmen. You go to faculty meetings and people in other fields have instant opinions about what the curriculum should be, or what the policy should be, and I think psychologists and lawyers are more likely to ask if there is any evidence that's relevant to this particular idea. I think that's an important thing in society in general.

Miller: Some of our colleagues have suggested that while undergraduate research is a good thing for students who are planning to go on to graduate school it is probably unnecessary for those who will be entering the world of work immediately after obtaining their degree. I wonder if that would be your view, or if you think there are advantages in conducting research for any student.

McKeachie: Well, I think it's great for people who are going to go on to graduate school, and in fact, it probably helps them to gain admission if they've got something published or have done a good research paper they can send in. But for the others, as I say, I think it's an important part of general education. The way we're trying to get them to think is just generally useful in society. It helps them to be good citizens; so I see it as a general educational objective rather than a pre-professional one.

Developing Students' Skills

Ware: What about some of the more specific skills, such as writing and speaking?

McKeachie: One of the big things in college education in the 70's and 80's was writing across the curriculum. We began to realize that a freshman English course doesn't necessarily teach students to write for a variety of different audiences.

In teaching students speaking skills, I'm really disappointed. We used to have a speech department, but that's been merged into communication, and speech is now de-emphasized, even though rhetoric was one of the classic areas of learning.

I pitched fast-pitch softball for many years, and my catcher was Al Storey, who was the head of our extension program and a faculty professor of speech. He had a lot of our athletes in his speech instruction class. I always felt that our athletes, when they are interviewed on television, were more articulate than a lot of the other big-time athletes; so I was really disturbed when they downplayed speech in the curriculum. I really think it's probably more important now, maybe even more important than writing, because almost anything people do today, they are required to speak. It's still offered at Michigan, but it's not near as important as it once was.

Ware: Students really grapple and complain about APA style. What are your impressions about the advantages of using APA style and requiring students to have some degree of mastery in it?

McKeachie: I think it's a good thing. The results of the mini-experiments that my students turn in are roughly in APA style. We ask them to think of three divisions: an introduction with some reference to the literature on what the problem shows; a description of the data and how you analyzed it; and then some discussion of how it came out; and the reason you think it came out that way. It's roughly APA style. But for their final paper, they're required to follow APA style.

I think it's a good style manual; you know it's used not just in psychology but as a model in a lot of other places. I had a Puerto Rican graduate student last year, and I gave him a Strunk and White (Ed.: editors of a style manual) just for general writing. The MLA (Ed.: Modern Language Association) style manual is useful, but I really like the APA style manual.

It gives a rubric and a structure for writing that I think is important. I think it makes it easier for undergraduates than if they simply tried to write a narrative without the structure. Part of it is that it forces you to think about what should be said. It's not just information, but it forces you to think about what needs to be in a communication about research.

[APA style] *forces you to think about what needs to be in a communication about research.*

Miller: In addition to the *Journal of Psychological Inquiry*, there is the journal published by Psi Chi (Ed.: *Psi Chi Journal of Undergraduate Research*) and a number of other journals publishing undergraduate student research. What do you think about this development?

McKeachie: Oh, I think it's great. Doing the research and just writing it up is usually the most popular part of my course. Students really get a good kick out of it, and can then see in print what they've done.

You know, I still get a kick out of seeing my stuff in print. I think that's very reinforcing, even though I'm not a strong behaviorist. It's not like working for a grade; it's kind of a recognition that you did something well, and it gives you a sense that you're worth something; it's self-efficacy.

Miller: Earlier you described some of your own experiences, and it seems like what you often do is have teams of students working together on a research project. What do you think are the advantages and disadvantages of that approach versus individual student projects?

McKeachie: Well, the advantages are that, particularly in a course like mine, which is not a lab course, they're able to get the work done because they can divide up the tasks. Also, they have different ideas, and they can consult with one another. You get all the advantages of cooperative learning and that kind of social facilitation, and not letting people kind goof off and put things off until the last minute, because the other people—at least one of them—wants the job done.

One of my friends is a vice president at General Motors. Hewas a statistician and used to be head of the Census Bureau. General Motors brought him in as Vice President for Market Research and because they were having trouble selling cars. Well, he got there, and he found out that the problem wasn't so much selling but that the engineers and the production people and the marketing people weren't talking to one another. So the designers would come up with things that were hard to engineer and hard to produce, if not sell, and each of these types of individuals were talking only with their group and having very little communication between the groups. So his job is basically to get people to work more in groups across these lines so that in the beginning when they're starting a car, all of the potential people who are going to be involved have some sort of say on what goes on, and they don't come up with a lemon. And so, I think people in industry, generally, feel that being able to work collaboratively in groups is much more important than it used to be. The organization is not just individuals who have got to compete with everybody else in the organization to get to be president. Now you get ahead by being effective and working in groups.

So working in groups, I think, is a skill in itself that is important as a general education objective, or at least as a vocational one. Really, I think it's general education whether you're going to work for General Motors or just in school to learn. In fact, it's probably a skill needed for anything you're going to work in. It used to be that dentistry was the last refuge of the lone professional. And now I go to my dentist's office and there are four hands in my mouth. Even dentists don't work alone.

I do still think there's a place for individual research as we do in our honors program. Last year we did an individual project. But I think to start out, the team approach gives support for people who lack confidence and helps them stay on task. They still have a sense that it's their product, even though its shared work with other students.

Miller: Have you developed techniques to minimize social loafing within those teams?

McKeachie: Well, the team approach works fairly well. It always has. If out of my class there are 10 teams, we'll have one or two where somebody goofs off, and when we get feedback early in the process, we get it straightened out. Or maybe the students simply don't get along. Once or twice, I warn them ahead of time that once you get out of school you're going to be working with other people who are not necessarily the people you choose to work with. It's not all going to be easy, so you're going to encounter problems in these teams that are normal problems, and part of the training is learning how to cope with these, and we're here to help you. There are always a few cases, but relatively few where the team approach doesn't work.

I talk about this at the beginning of the class. But the real zinger, I guess, is that I have them turn in a group report and everybody gets the same grade. Except that I say that each of you will be given, when you turn in your paper, a slip with 100 points, and you can distribute the 100 points among your team in terms of each person's contribution, and if there are 3 of them they can always do 33.3, 33.3, 33.3. But, and I say, if it appears from the slips that are turned in that one person is not carrying his share of the load, that person will get a lower grade than the group grade, and if it looks as if one person is doing most of the work, maybe that person would get a higher grade. I don't like the notion that it's mainly a negative sanction, but in most cases it seems to work without the sanctions.

Miller: What would you see as the particular challenges of group work?

McKeachie: Well, I think part of what makes it work is trying to get through to students that it's not just another task. They need to know some basic principles of group activities, like at the first meeting to get schedules. At a big campus like ours, one of the big problems is meeting to do the work. We give them some class time for planning, but most of the work has to be outside of scheduled class meetings. So we say, get your schedules and find all the times that are going to be available, and before you break up, be sure you all agree on the time and on what each person's going to do before the next meeting. And don't just say, "OK, are we all agreed?" Ask each person, because some people just keep quiet, and if they've made an oral commitment, they're more likely to follow through on it. And try to figure out tasks so that each person's making a contribution that's appropriately equivalent; so one person isn't doing all the work. These sorts of things I think are important.

Miller: When you think of working with undergraduate students on research, do you think of it as a part of teaching, or do you think of it as a part of research and scholarship?

McKeachie: I think mostly teaching. I have my own separate research group, but I think you could make an argument that it's also a scholarly activity. You've got to review the proposals and research and guide it, and I think that requires a good deal of scholarly activity.

Final Remarks

Miller: We've been talking about some of the advantages to students of conducting research. What are the advantages you might see for faculty in becoming involved with undergraduate research?

McKeachie: Well, undergraduate students have a lot of good ideas. I think it's stimulating; I think it provides rewarding interaction with students. So I think it has both intellectual and interpersonal rewards. It's work, but it's worth it.

Miller: What's the next research question you'd like to have an answer to?

McKeachie: Well, I think I'd like to know a lot of things, but an area I see that is very important is how you get or develop greater intrinsic motivation. I mean, we know something about it, but I'd like to get a better fix on what teachers do. I think autonomy is one of the things that contributes to it, and we've done a little bit there. I think it would be interesting to look at the relationship between that and students' conceptions of education as they begin to see that it's not just a matter of learning facts but more of what's called self-regulation—planning and managing your own learning effectively by making sure you really do understand things and get meaningful information, not just the kind you need to pass the test with.

We have a set of scales called the Motivating Strategies for Learning Questionnaire. We need to know how different teachers influence these things. I think it's kind of cyclical, but it may be that certain things are cues in getting started. Paul Pintrich is interested in students' conceptions of learning, and he thinks maybe that's the key thing. I'm more inclined to think it's developing some kind of sense of self-efficacy, which then moves them to pursue learning.

Miller: We're almost out of time. Do you have any final observations in terms of this collaboration endeavor between faculty and undergraduate students to involve the students in scholarly research.

McKeachie: Well, I just think it's great that you've set up this publication. I also get the Whitman High School publication (Ed.: *The Whitman Journal of Psychology*) and it's even starting in high school, and I think that's terrific. Anything we can do in this area really does make a difference.

Students do decide to go into psychology because they find this an exciting thing to do and that's nice, and I think it's a good indicator that research is a valuable thing, but I just think that giving students a sense that here's something that you can learn for the rest of your life is important. They're learning from their experience, like those being trained in music who can hear more in a symphony. I think that student involvement in research makes life richer.

... student involvement in research makes life richer.

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Views From an Editor: Another Perspective on Publishing

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This article presents information from an editor's perspective about submitting manuscripts to journals. A page called "Instructions for Contributors" will inform authors about (a) the types of manuscripts and other qualifications, as well as (b) procedures for submitting manuscripts. Following the instructions will facilitate processing the manuscript. For revised manuscripts, editors expect authors to submit a manuscript that addresses substantive and format issues. One's cover letter should give a rationale when failing to follow editor's and reviewers' recommendations. Patiently waiting to receive feedback about a revised manuscript can be difficult, but knowing that a thorough revision increases the likelihood of publication should help to manage the delay.

Previous articles have presented various perspectives on submitting manuscripts for publication. For example, Brownlow (1997) answered the basic question "Why take the extra step to get your research published?" (p. 83) by enumerating the rewards that undergraduates can expect from publishing. Miller (1997) presented information about the process of writing for publication, particularly advising authors to take seriously the process of revision. He provided some valuable insights from the viewpoint of manuscript reviewers. Clark (1997) offered helpful pointers about how to prune an honors thesis or senior project into a manuscript ready for submission to a journal. Her article gave some insight into the faculty advisor's role in the thesis/project-to-manuscript process. In this article, I will give you some advice from the perspective of a journal editor. Knowing what the editor's role is in the editorial/review process and what the editor looks for may prove valuable as you prepare your manuscript.

Know the Journal to Which You Are Submitting

Some editors view their role as gatekeepers—those whose task is to *prevent* people from publishing. However, editors for journals that publish undergraduate students' research want to help you succeed. All editors serve as gatekeepers when they initially receive a manuscript and scan it to determine whether it fits the journal's mission. All journals have a particular mission. Some journals publish articles only in narrow specialty areas; some publish only certain types of articles. Your task is to submit a manuscript to the proper journal.

To determine the mission of a particular journal, examine a page entitled "Instructions for Contributors" that appears near the front of most journals. In the *Journal of Psychological Inquiry* (*JPI*), you will find this page immediately preceding the first article. You will learn that *JPI* publishes empirical studies, literature reviews, and historical articles by undergraduate students. Graduate students can submit their articles *if* they completed the work as undergraduates. If you do not fit one of those categories, you should not submit your manuscript to *JPI*.

You will also discover that eligibility for submitting manuscripts stipulates that (a) the student's college or university provided financial support for *JPI* and the Great Plains Students' Psychology Convention or (b) the student had his/her research accepted for or presented at the Great Plains Students' Psychology Convention or at the meeting of the Association for Psychological and Educational Research in Kansas, the Nebraska Psychological Society, or the Arkansas Symposium for Psychology Students. Finally, do not submit manuscripts published or accepted for publication in another journal. Such duplication of publication (a) can give a false appearance about the amount of available information and (b) waste journal space as well as the time and energy of editors and reviewers. However, this provision against duplicate publication does not prevent you from submitting a manuscript based on a presentation you made at a research convention or similar meeting.

If your manuscript is not eligible for *JPI*, other journals are available. Information on *JPI*'s home page (http://puffin.creighton.edu/psy/journal/stujour.html) lists other psychology journals that publish students'

Randolph A. Smith is Editor of the journal, *Teaching of Psychology.* Portions of this article appeared in the *Psi Chi Journal of Undergraduate Research.*

scholarly work. The *Psi Chi Journal of Undergraduate Research* publishes empirical studies by Psi Chi members without regard to institutional affiliation or previous presentation at a specific convention. The *Journal of Psychology and the Behavioral Sciences* publishes literature reviews and empirical reports. If you are a graduate student wishing to publish work you have completed in graduate school, *Der Zeitgeist, The Student Journal of Psychology*, an electronic journal, is a possibility.

Read and Follow Directions

Not only does the "Instructions for Contributors" page tell you what types of manuscripts a journal publishes and whether the journal has specific author requirements, it also gives you a list of directions to follow as you prepare your manuscript. *JPI* goes so far as to provide a checklist of items to include when you submit the manuscript. When you follow directions, you encourage the editor to help you publish.

American Psychological Association (APA) Format

Most psychology journals require that authors write manuscripts in the format described by the *Publication Manual of the American Psychological Association* (4th ed., 1994). To facilitate communication, psychologists use a standard style that is uniquely their own, although other academic disciplines are increasingly using APA style. This standardization allows readers to easily find information in journal articles and lets writers know what belongs where in their manuscripts.

If you have written a paper in APA format for a class, then you are familiar with some of the fundamental requirements. Many experimental psychology or research methods textbooks (e.g., Smith & Davis, 1997) include a chapter devoted to APA style but condensing a 368-page style book into a single chapter is impossible. If you do not own a copy of the *Publication Manual*, buy one because it is an investment in your future as an author and consumer of scientific research. Finally, the American Psychological Association has produced software to help students write APA style manuscripts (VandenBos, 1999). One can obtain more current information by examining the Web site: www.apa.org/apa-style/

The editor will particularly appreciate your best effort to follow APA format. Thus, any time you have the least bit of indecision or uncertainty about a particular style question, consult the *Publication Manual*. You may also wish to visit *JPI*'s Web site (http://puffin.creighton.edu/psy/journal/freqerr.html) where you will find a list of common APA format errors that students make (Ware & Murdock, 1997). This list may help you avoid errors as you polish your manuscript.

When writing manuscripts in APA format, one notes numerous oddities. For example, because all word processing programs can print characters in italics, one might ask why authors should not use that function? Companies that print and publish journals have computers programmed to turn underlines into italics. The *Publication Manual* (1994) is a "transitional document" (p. xxiii), and evolution in language and technology will contribute to an evolution of the *Manual.*

What to Submit

JPI, like most journals, provides authors with a list of materials and procedures associated with submissions. I will elaborate on each of those.

Five copies of the complete manuscript. The editor will send your manuscript to three reviewers—faculty members who are knowledgeable about the topic of your research. The editor personally reviews the fourth copy and files the fifth copy. If you do not provide the requisite number of copies, the editor will either have to make copies (incurring departmental expense) or ask you to send the correct number of copies.

A self-addressed, stamped postcard. The postcard is primarily for your benefit—the editor will use it to let you know that your manuscript arrived. The postcard also notifies you that the review process has started.

A self-addressed (large) envelope with postage. When you have everything in a manila envelope ready to mail to the editor, including the self-addressed envelope, do not seal the envelope. Instead, have a postal employee weigh the envelope to tell you the cost of mailing—put the same amount of postage in *stamps* on the self-addressed envelope before you seal and mail the envelope. The amount of postage required to process all the mail associated with a journal is quite high. Including an envelope with postage is one way to help the journal defray its costs. Be sure to use stamps because a postage meter label is always dated and would not be usable at a later time.

A sponsoring statement from the faculty supervisor. A helpful faculty eye can spot correctable problems before you submit your manuscript. Your supervising faculty member should certify three items in a cover letter. First, in conducting your research, you adhered to the APA ethical guidelines for human or animal participants. Second, your supervisor probably read and critiqued your paper for content, APA style, and presentation. Third, the research, from conception to manuscript preparation, must be primarily your work. A faculty member or graduate student can lend you assistance but should not be the driving force behind the research.

Names and addresses of authors and sponsors. On a separate sheet, list the names, addresses, and phone numbers of the author(s) and faculty sponsor(s). Additionally, provide a permanent address and phone number (e.g., one's parents). This information will help the editor contact you quickly, particularly during vacation times or after you have left undergraduate school.

Send submissions. Send all materials to the *JPI* managing editor, whose name and address are listed in the "Instructions for Contributors" page in the journal or on the following Web site: http://puffin.creighton.edu/psy/journal/inscon.html. To distribute the workload evenly, the managing editor directs manuscripts to editors using a rotational system. The only other consideration is that editors will not review manuscripts from students at their schools. The managing editor will notify you about the editor who will process your manuscript. Editors' e-mail addresses are available on the Web site at: http://puffin.creighton.edu/psy/journal/email.html.

Responding to Reviews

One day, several weeks after submitting your manuscript, you will find in your mailbox the envelope that you addressed to yourself. When you open the envelope, you will find a letter from the editor that informs you about the status of your manuscript. The editor's letter will provide you with some direction for revising the manuscript so that you can resubmit it. Miller (1997) provided many instructive suggestions for revising manuscripts by using the editor's and reviewers' feedback. The good news is that the acceptance level for revised manuscripts is relatively high for student journals. Editors are pleased when they receive revisions that are better than the original manuscript, that address substantive comments raised by the editor and reviewers, and that include a letter providing reasons for ignoring suggestions the editor and reviewers made. I will examine each of these issues.

Submit an Improved Manuscript

Editors and reviewers for undergraduate journals make a concerted effort to provide positive feedback. As you and your advisor look at the critiques and your manuscript, divide the editorial comments into those that you will incorporate into your revised manuscript and those that you will not.

Addressing Substantive Comments

At least some of the editor's and reviewers' comments will evoke a "Why didn't I think of that?" response from you. As you can imagine, these comments are typically the simple ones with which to deal. However, they may require concentrated effort. A reviewer may ask you to explain a passage more clearly when you think it is already perfectly clear. A reviewer may suggest including more background literature for your introduction, and you remember how hard you worked to find the information you included.

The editor may ask you to clarify some aspect of your methodology, although you thought that you included all the important details. However if reviewers are confused, there is a high probability that readers will be confused. Sometimes a reviewer or editor might suggest different or additional statistical analyses of your data. You might even receive editorial comments that suggest additional or different implications of your results—information that might lead you to revise your discussion or conclusions. Thus, although you may find editorial comments with which you agree helpful and desirable, there is no guarantee that the revision process will be a simple one.

"Ignoring" Editorial Suggestions

Receiving editorial comments and suggestions with which you disagree is not uncommon. I must emphasize, however, that carefully considering *all* suggestions and discussing each comment with your advisor is very important. Often, after reflection and discussion, you may change your initial impression and come to the realization that the comment was appropriate. Many writers have difficulty accepting criticism and suggestions, but such an attitude is not constructive when writing and revising articles for publication.

At the same time, you should know that some comments are merely suggestions. Attempt to distinguish suggestions from imperatives. For example, if the editor or reviewers find errors in your APA formatting, making those changes is not optional. Likewise, if they point out that you ignored important background literature, left out important details about the participants or procedures, or used an incorrect statistical analysis, you should understand that those comments represent mandatory changes.

On the other hand, you will recognize some comments as being matters of opinion or interpretation. Some reviewers may begin questions with phrases such as “I wonder if you thought about … ?” or "Did you consider … ?” Such questions often indicate points that reviewers would like you to ponder, but this approach leaves the final decision of inclusion to you. This type of question does not mean that you should take it any less seriously than other questions; the reviewer simply is not insisting that you incorporate this issue in your revision. When uncertain or in doubt about issues raised by *JPI* editors and reviewers, e-mail the editor of your manuscript (http://puffin.creighton.edu/psy/journal/email.html) and ask for clarification. *JPI* editors also welcome phone calls.

Finally, you might note in the header for this section, I put the word *Ignoring* in quotations. Rejecting a suggestion, comment, or question without providing a rationale will raise concerns in the editor’s mind. You should write a cover letter to accompany the revised manuscript. A thorough cover letter documents the changes that you made based on the reviewers’ comments. Because the manuscript incorporates those changes, your description of them can be brief. A more important function of your cover letter is to address the editor’s and reviewers’ suggestions that you did not incorporate. Editors and reviewers appreciate a clear and convincing statement as to why you did not make a change they suggested. If you cannot provide a clear rationale for *not* making a suggested revision, you may be on shaky ground and probably should rethink your position.

As you might imagine, expressing appreciation for reviewers’ suggestions, even those that you did not incorporate, is likely to increase the reviewers’ sympathy for your viewpoint. Often, the editor will copy your letter and send it to the reviewers along with your revised manuscript.

Biding Your Time

One of your most difficult tasks after submitting a revised manuscript is the waiting. The editorial process is a slow one. The editor must receive your manuscript, package and mail it to reviewers, and wait for them to return their reviews. Although editors may ask reviewers to return reviews in a month, reviews often trickle in late. Once the reviews are returned, the editor can process your manuscript.

Be sure to record the date on which you sent your manuscript so that you will know exactly how long it has been under review. If you have not received notification about your manuscript’s review after six weeks, e-mail the editor and inquire about the manuscript’s status.

If you have a manuscript accepted for publication, understand that journals tend to have long production schedules. According to the *Publication Manual* (p. 291), the publication lag varies by journal but is about 7 months. Currently, *JPI* is published once a year about the first of March. Thus, the length of delay before publication in *JPI* will depend on when the manuscript is accepted.

Summary

I have attempted to provide you with some insights into the editorial and publication process from an editor’s point of view. Although much of the editorial processing of your manuscript is in other people’s hands, there are a variety of strategies you can adopt to increase the probability that your manuscript will be published. If you know the journal to which you submit, read and follow directions, respond appropriately to reviews, and wait patiently, you may experience the excitement and joy of seeing a permanent record of your scholarly accomplishment.

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Invitation to Contribute to the Special Features Section

Undergraduate students are invited to contribute to the Special Features section of the next issue of the *Journal of Psychological Inquiry* by submitting a 3-5 page manuscript that contains a psychological analysis of a television program or movie. The analysis should describe particular events that occurred in the program and use psychological principles to explain why those events occurred. The Special Features section of the current issue (pp. 38-41) contains two examples of the type of psychological analysis students may submit. Citing specific references that support the analysis is optional. Programs may be analyzed from the perspective of any content area in psychology.

Option 1—Television Program:

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

Option 2—Movie Analysis:

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

Procedures:

1. The deadline for submission to this Special Features section is November 1, 1999.
2. All manuscripts should be formatted in accordance with the APA manual (latest edition).
3. Provide the following information:
   (a) Names, current addresses, and phone numbers of all authors. Specify what address should be used in correspondence about your submission,
   (b) Name and address of your school,
   (c) Name, phone number and address of your faculty sponsor, and
   (d) Permanent address and phone number (if different from the current one) of the primary author.
4. Include a self-addressed stamped postcard and a self-addressed stamped envelope. On the reverse side of the postcard, write the name of the author and the title of the essay.
5. Send three (3) copies of the a 3-5 page manuscript in near letter quality condition using 12 point font.
6. Include a sponsoring statement from a faculty supervisor. (Supervisor: Read and critique papers on content, method, APA style, grammar, and overall presentation.) The sponsoring statement should indicate that the supervisor has read and critiqued the manuscript and that the writing of the essay represents primarily the work of the undergraduate student.

Send submissions to:

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