Initial Forays into Psychological Science
John Brown University

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John Brown University

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**Editor’s Corner**

Researchers sometimes stumble upon spurious findings that appear to be statistically significant. Scientists realize that valid empirical evidence only comes from replicated findings. The publication of the second volume of this journal marks the first replication of a new experience in writing and publication for students taking Psychology classes at John Brown University. This second volume of *Initial Forays into Psychological Science* (IFPS) has shown that it is possible to repeat the concept of encouraging a high level of scholarship in the Research Methods and other classes at JBU by rewarding excellence in scholarship with publication. It continues to provide students in the Advanced Research Seminar class with an opportunity to have real life experience in the peer review process and to get students excited about doing research. This volume also promises to provide guidance to new researchers using the example of experienced students.

The achievement of the initial peer review board has also been replicated by this year’s group. The research published in the volume is the first fruit of research using IFPS as a guide and encouragement to producing high quality research. I expect the developing culture of scholarship to continue to grow in future years as the quality of the published research continues to increase. The peer review work of the students in the Advanced Research Seminar once again was very high quality. The promise of the journal is starting to be realized as research is now seen as something everyone can do and something that can be interesting and relevant. These peer reviewers were the first group to have benefited from the use of the journal in their Research Methods class and the quality of research they produced this year will be reflected in the next volume of the journal which will include the work of the Advanced Research Seminar for the first time. There is no evidence of external validity without replication and I hope you will find this replication of the journal to be helpful as you plan, conduct, and communicate the results of the research you conduct at JBU.

Richard Froman, Managing Editor of IFPS

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The members of the Peer Review Board for the second volume of IFPS. Kneeling (l to r): Rebecca Neyhard-White, Felicita Parmain, Samantha Scott, Laura Kiehlbauch, and Danielle Siebert. Sitting (to r): Steven Beatty, Don David Turner, Nicholas Cornett, and Mark Taube. Standing (to r): Tim Smith, Cynthia Faires, Jessica Heatherly, and Lindsay McFadden. Not pictured: Sarah Pollack, Meredith Sims and Gracey White.
Instructions for Contributors

Initial Forays into Psychological Science (IFPS) is a journal which solicits manuscripts from undergraduate students in psychology classes at John Brown University. Manuscripts may include research projects conducted for classes, theoretical and review papers written for classes and empirical or theoretical research conducted as part of a course of independent study while an undergraduate student at John Brown University.

1. The author must have been a student in a psychology class at John Brown University at the time the paper was written. The paper must have been read and commented on by a John Brown University faculty member. Submission of research to IFPS is not limited to psychology majors but it is limited to students enrolled in psychology classes at John Brown University.

2. Manuscripts can not be submitted for publication in IFPS while they are being considered for publication anywhere else.

3. Manuscripts must be formatted in accordance with the manuscript style of the latest edition of the American Psychological Association (APA) Publication Manual.

4. Manuscripts must be submitted electronically as an attachment in either Microsoft Word format or Rich Text Format. Use a 12 point readable font (such as Times New Roman).

5. In the submission e-mail, provide your school e-mail address and a more permanent summer or post-graduation e-mail address, if one is available.

6. The review process will be completed during the course of the next Fall semester by the students in the Advanced Research Seminar. Dr. Froman will act as editor and the members of the ARS course will act as reviewers for all of the submitted manuscripts. The reviewers will work in groups so that students’ submissions will not be reviewed by anyone in their group. The review process is likely to require the author to make some revisions over the course of the Fall semester. Revisions need to be made and re-submitted in a timely way in order to ensure full consideration for publication.

7. The IFPS will be sold at cost to Research Methods students in the following semester to be used as a required text in the course. It will also be published on the Psychology Department website in a format that can be openly accessed by employers, graduate schools, family and friends, etc.

8. E-mail submissions to Dr. Rick Froman at: rfroman@jbu.edu. Include the following statement in your e-mail message: “I, [your name] give permission to have the attached manuscript considered for publication in IFPS. I give permission to the journal (IFPS) to publish my work and sell it to university students at cost. I understand that I will retain the copyright and the right to submit my manuscript to any other publication I desire.”
The Relationship Between Self-Esteem and Dating Satisfaction In College Students

Steven Beatty

This study compared the self-esteem level of college students to their dating relationship satisfaction level. Twenty undergraduate students took a survey designed to measure self-esteem and relationship satisfaction. Though previous research did support the hypothesis that those with higher self-esteem will rate their dating satisfaction as being higher, it was not supported with this study. This could be due to the fact that an online sample was used, and only nine of the students surveyed were currently in dating relationships.

How are self-esteem and dating related? There has been research in the past that has dealt with the idea that people in healthy dating relationships will have higher self-esteem than those who are not dating. But how does self-esteem affect those who are already in dating relationships with someone? Will those with higher self-esteem also have a better, more fulfilling relationship? Does self-esteem influence the satisfaction of a relationship at all? Past research dealing with this topic seems to suggest so.

For example, a previous study has shown that individuals with higher self-esteem who were in dating relationships reported more satisfying relationships than those with lower self-esteem did (Helson, 1994). Peretti and Pudowski showed that those with lower self-esteem who were dating were less satisfied due to problems such as jealousy and self doubts in their relationships (1997). Also, another study suggested that those with lower self-esteem would have higher doubts about what their partners felt about them, leading to a more unsatisfying relationship experience due to their constant doubting and uncertainty (Murray, Holmes, McDonald, & Ellsworth 1998).

Although there could be many other reasons for relationship satisfaction or dissatisfaction besides self-esteem alone, past research does support the correlation between self-esteem and relationship satisfaction. When people are continually doubting themselves and underestimating how their partner feels about them, there is also surely to be continual problems that get in the way of overall satisfaction of the relationship (Murray). If those with a higher self-esteem are more secure about themselves and how their partner regards them, then their relationships will most likely be more secure as well, leading to more overall satisfaction in the relationships.

Agreeing with the past research on this area, I also suspect that self-esteem and dating relationships are correlated in some way. It seems that overall relationship satisfaction can be linked to the level of self-esteem that a person has. The higher the esteem, the more positive the relational experience.
will be. Therefore, I expect to find that individuals with a higher self-esteem will perceive their relationships as being more satisfying than those with a lower self-esteem will.

**METHOD**

**Participants**

The participants were 20 students at John Brown University who were picked at random to receive an email request for taking the survey. No extra credit or any other types of rewards were given to the participants. They were asked to fill out the survey online through a link in their email. Informed consent was assumed if they hit the “submit” button at the end of the survey, and this was explained to them in the survey directions.

**Materials**

The only material used was the online survey. It was accessed by following a link that was sent randomly to the students email, asking for their help in the participation. The survey consisted of 21 questions with two short parts. Part I contained the Rosenberg Self-Esteem Scale, which consisted of 10 questions that dealt with the self-esteem aspect of the study, and Part II consisted of 11 questions pertaining to dating satisfaction. There was an introduction at the top of the survey that explained the basic details of the research project and gave instructions and information relevant to the survey.

**Procedure**

A correlation between the participants’ responses on both the self-esteem survey and the dating satisfaction survey was used to compare their answers. A random list of 80 students email addresses was obtained. Out of the 80 students, 29 responded to the survey, but only 20 of those were able to be used. Each participant was required only to fill out the online survey and submit it to be part of the research project.

**RESULTS**

The correlation between self-esteem and dating relationship satisfaction was done using a Pearson r analysis. No significant result was found, and there was no positive correlation between self-esteem and dating relationship satisfaction, \( r(18)=0.337, p=0.147. \)

**DISCUSSION**

The purpose of this study was to see if there was a correlation between self-esteem and dating satisfaction, and no positive correlation was found, making the results non-significant. This study thus did not support the hypothesis that individuals with a higher self-esteem will also rate themselves as having more dating relationship satisfaction than those with lower self-esteem will rate their dating satisfaction.

This hypothesis has been supported by other studies in the past. One previous study showed that positive self-esteem was a predictor for a more satisfactory relationship (Helgeson, 1994). Other previous related stories have also been along the same lines. For example, a study done in 2000 showed that those individuals who had a lower self-esteem underestimated how positively their partners saw them (Murray, Holmes, Griffin). Another past related study supported the hypothesis that those in dating relationships with a lower self-esteem would also report a higher level of jealousy (Peretti & Pudowski, 1997), which is a predictor of lower dating satisfaction.

The results of this study were not significant. One reason for this could be the small sample size. Out of the 29
responses, only 20 of them were fully completed. Out of those 20, only nine students were currently in dating relationships.

A larger sample size including more dating individuals could help to support the hypothesis in future research. Not only a larger sample size should be considered, but also using the survey at many various colleges across a wide area. This could strengthen the hypothesis even more, and make the results significant, if there is significance to be found.

Since the result of this study did not yield significance, also looking at the online survey could lead to reasons why there was no correlation. For this specific study, and online survey was not the best route to take because it is hard to obtain results from those individuals only in dating relationships by mere chance. A better solution would be to do a face to face survey on a larger sample, and obtain all of the dating students’ responses for the correlation.

Also, one further explanation could be that there is no correlation between self-esteem and dating. This is one explanation, but probably the least valid, considering the fact that many other previous studies have found a correlation and significance between self-esteem and dating relationship satisfaction.

Finally, for future research in this area, it is recommended that a larger sample size be used. Also, an online survey should not be used. A face to face survey would be the best bet for this study. Also, many other factors could be looked at that could have an influence on both self-esteem and dating satisfaction. Both dating satisfaction and self-esteem are interesting topics to study, and future research should further study both in order to learn more about them and their relationship to one another. By focusing on the main areas mentioned above, this study could be improved greatly, and may lead to more significant findings, if there truly is significance to be found.

REFERENCES

Psi Chi is the National Honor Society for Psychology Students. You can be a chapter member here at JBU. If you are academically eligible, Dr. Cater will notify you and give you the opportunity to join. For a small dues payment, you will be a life member. Ask any of the psychology professors if you have any questions.
Locus of Control and BMI

Nicholas A. Cornett

This present study explored the possible relationship between locus of control and body-mass index. Research suggests a relationship between the variables as those who identified themselves with an internal locus of control tended to lose more weight in weight-loss programs. A random sample of 40 under-graduates completed a survey, which assessed internal-external locus of control and their BMI rate. Researchers expected that those with an internal locus of control would have lower BMI rates than those who identify with an external locus of control. A Pearson r correlation, however, was not significant. The results might be due to the unrepresentative sample, as college students might be more “internally controlled” and healthier than a general population.

Ever since Julian Rotter (1954) constructed the Social Learning Theory and the concept of locus of control, research has continued to investigate its possible relation to other variables surrounding an individual’s life. Rotter proposed two distinctions in locus of control; there are individuals who have an internal locus of control and others with a more external locus of control. A person described as possessing an internal locus of control, according to Rotter, would feel that they have a direct influence on their life due to such things as their attitude, personality, and behavior. On the other hand, a person with an external locus of control would feel that outside forces influence their life, and they have less influence on its outcome. What might a difference in locus of control suggest in other areas of the individual’s life, especially in health?

Previous research provides important insight into the possible relationships that might already exist concerning locus of control and health factors. Wallston (1992) theorized that the combination of a value of health, self-efficacy, and a belief in internal locus of control over health will predict the occurrence of health behaviors. Subsequent studies seem to provide support for such a theory. For example, researchers in one study found that a belief that doctors or family control one’s health outcomes (an external locus of control characteristic) may impact the amount of distress experienced in relation to a physical illness (Shelly & Pakenham, 2004). In addition, Zdansowicz, Janne, and Reynaert (2004) explored the potential role of locus of control in the health of adolescents through examining the differences in locus of control between a population of healthy adolescents and a population of mentally ill adolescents. They found that the adolescents in the “healthy” group had a higher internal health locus of control while those individuals with mental disorders had less internalization, possibly resulting in a lower sense of personal responsibility and a higher level of dependency on others.
Locus of Control and BMI

Other research has specifically analyzed the role that differences in locus of control might have with regard to a person’s weight. A research study done to assess weight locus of control beliefs in a community sample found that those in the higher Body Mass Index group “were more likely to believe weight to be internally controlled” than those in the lower group (Paxton & Sculthorpe, 1999). Another research study, done by Adolfsson et al. (2005), sought to determine if locus of control orientation influences weight loss among participants in a yearlong weight reduction program. They discovered that those individuals who experienced significant weight loss more likely had an internal locus of control orientation. Similarly, individuals participating in a weight-reduction diet experienced an increase in a sense of control over weight and eating behavior (Bryan & Tiggemann, 2001). Obese individuals in another study who had higher locus of control (more internal) experienced significantly less weight regain after participation in a weight reduction program (Nir & Neumann, 1995). These research studies suggest possible differences in relation to locus of control, feelings of control over one’s weight, and actual weight differences.

Consistent with previous research findings, the researcher expects that participants who have a lower BMI rating will tend to identify with an internal locus of control orientation more often than those individuals with a higher BMI rating.

METHOD

Participants
The researcher collected data from 40 undergraduate students at John Brown University, a small Christian liberal arts college in the South. To select the students to participate in the study, a random sample of 80 students was generated from the email addresses of students enrolled in the school. The 40 participants comprise all those students who decided to take part in the study. The participants did not receive any inducement for being in the study.

Materials
The study utilized a single fourteen-question online survey to assess internal-external locus of control and BMI. The first four questions asked for the participant’s height, weight, age, and gender to calculate the Body-Mass Index. The remaining ten questions evaluate internal-external locus of control through a 5-point Likert scale. Participants rated how accurately the statement reflected them from “Strongly Disagree” to “Strongly Agree”. To construct the online survey, the researcher used Microsoft FrontPage 2003, a computer program. In order to reach the participants in the sample, the researcher emailed the students, giving his name, asking them to take part in a study, and the nature of the study. Students had the option of following a link within the email that took them to the survey placed online through the school’s website.

Procedure
The present study used a correlation approach comparing the relationship between two variables (internal-external locus of control and BMI rating). Because the researcher did not manipulate the variables themselves, the study is considered an ex post facto study. To recruit participants, the researcher contacted 80 undergraduates by email through a random sample of students at John Brown University. The participants “agreed” to the study by clicking on a link to the online survey.
and proceeding to take the fourteen-question survey and submit the results. At the beginning of the survey, the researcher informed the participants about the nature of the research, the anonymity of their results, and their right to withdrawal from the study at any point. When the participants clicked the “submit” button on the survey, the results were transferred to the instructor anonymously and then given to the student in a Microsoft Excel Spreadsheet.

RESULTS
The researcher analyzed the data using a Pearson r correlation, and no significant correlation was found between locus of control and BMI, \( r(38) = .20, \) ns. This result does not support the hypothesis that individuals with higher BMIs will tend to identify more with an external locus of control orientation than individuals with lower BMIs. To further illustrate the closeness of the scores between the two groups, the mean locus of control score for individuals for the higher BMI group (overweight and obese) (\( M=31.85, s=3.78 \)) is very similar in value to the mean locus of control score for the lower BMI group (normal and underweight) (\( M=31.41, s=5.99 \)).

DISCUSSION
The results of this study did not support the hypothesis that individuals with higher BMIs will tend to identify more with an external locus of control than individuals with lower BMIs. Past research seemed to suggest a relationship between locus of control and weight, but the results in this study did not. A closer look at the previous studies, however, reveals that these studies did focus on locus of control differences in connection with weight loss while this present study assessed the relationship between locus of control and current weight. This slight difference in focus might account for the lack of significance in the correlation found in this study.

Another possible explanation the finding may be attributable to population used in the study. Because the researcher used college students as the participants in the study, the sample might not be representative of the general population. For instance, many people might characterize the college population as being more “internally controlled” than the normal population. These students might perceive they are in more control of their success in life and be more goal-oriented. Another discrepancy that may exist in the college population that offers an alternative explanation for the finding is that they might be “healthier” than the general population. These factors may have limited the variability of the data and participants.

As the possible lack of a representative population might have influenced the results, the first suggestion for future research is to replicate the study with a more representative sample. In addition, future studies might seek to assess the relationship between scores on the Health Locus of Control scale and a participant’s BMI. The more specialized questions of the HLOC scale, which focuses on how much control an individual perceives to have over their health, might provide more relevant application to a health variable like BMI.

REFERENCES
Locus of Control and BMI


Appendix

Survey

Please read:

The purpose of this research is to assess the participant's perception of control in their life and determine if this is related to other variables. This survey should take less than 10 minutes to complete. Please answer in the corresponding space to each question, and click 'submit' at the end of the survey when you have completed it. You have the right to decline to participate in this research at any point. Your results will remain anonymous and confidential. If you have any questions or comments please email me at: cornetttn@jbu.edu

Age (in years)

Height (in feet and inches)

Weight (in pounds)

Gender

Instructions: Indicate the extent to which each of the following statements applies to you.

1. When I get what I want, it is usually because I worked hard for it.
   Disagree Strongly    Agree Strongly

2. When I make plans I am almost certain to make them work.
   Disagree Strongly    Agree Strongly

3. I prefer games involving some luck over games requiring pure skill.
   Disagree Strongly    Agree Strongly
4. I can learn almost anything if I set my mind to it.

Disagree Strongly    Agree Strongly

5. My major accomplishments are entirely due to my hard work and ability.

Disagree Strongly    Agree Strongly

6. I usually don't set goals because I have a hard time following through on them.

Disagree Strongly    Agree Strongly

7. Competition discourages excellence.

Disagree Strongly    Agree Strongly

8. Often people get ahead just by being lucky.

Disagree Strongly    Agree Strongly

9. On any sort of exam or competition I like to know how well I do relative to everyone else.

Disagree Strongly    Agree Strongly

10. It's pointless to keep working on something that's too difficult for me.

Disagree Strongly    Agree Strongly

By clicking on the Submit button once, you are agreeing to submit your answers to the survey for purposes of data analysis in this study.
Relationship Between Personality
and Worship Service Preference

Mark H. Taube

The purpose of this study was to examine the relationship between personality type and service style preference. Participants included 36 undergraduate students from John Brown University, a small private university in Northwest Arkansas. Participants completed a 50-item questionnaire designed to measure participants’ introversion or extroversion tendencies, and their preference for either liturgical or contemporary type services. Results revealed a significant positive relationship between extroversion and preference for contemporary services, and introversion and preference for more conservative service styles. These results underscore that religious preferences can in part be attributed to personality types.

Differences between introverts and extroverts have been observed for ages. Psychologists have been trying to determine for the past century to what extent these differences affect the way these personality types influence decisions, and how they interact with their environment. However, little research has been done on introversion and extroversion and their effect on religious preferences.

Ever since Eysenck first proposed his hypothesis on cortical arousal, there has been much interest in investigating the differences between the reaction of introverts and extroverts to environmental stimuli (Frunham & Allass 1999, Furnham & Strbac 2002). Eysenck’s hypothesis of cortical arousal suggests that introverts and extroverts differ in cortical arousal levels, requiring extraverts to seek more external stimulation than introverts in order to maintain optimal arousal levels (Taub 1998). Most of the studies done in this area have supported Eysenck’s hypothesis. Campbell and Hawley (1982) found that extraverts preferred study environments with higher levels of noise and socializing opportunities than introverts. Extraverts also rated socializing opportunities higher than introverts. Both of these tests seem to support Eysenck’s theory.

Other studies indicate that extraverts are not as affected by distractions as introverts are (Frunham & Allass 1999, Furnham & Strbac 2002, Morgentern, Hodgson & Law 1974). One study on personality and work efficiency indicated that extraverts’ work efficiency may actually improve in the presence of distraction (Morgentern, Hodgson & Law 1974). Several tests have used cognitive performance tests and aural distractions to determine different personality responses to distraction (Frunham & Allass 1999, Furnham & Strbac 2002). In one study, Furnham & Strbac (2002) found a significant difference between introvert and extrovert per-
formances in reading comprehension when either music or background noise were present. However, they failed to find any significant performance differences between introverts and extroverts when doing prose recall and mental arithmetic under the same environmental conditions. It is important to note that in another study, there were no differences in performance between these two groups when performing cognitive tasks such as reading comprehension, memory recall, and spatial tasks when in the presence of simple and complex music (Furnham & Allass 1999).

Finally, a study done by Rawlings and Ciancarelli (1997) on music indicated a relationship between music preference, and extroversion and openness. This study also revealed that extroverts tend to score higher in preference for popular music than the other personality types.

All this research seems to indicate that extroverts prefer and function better than introverts in loud, sociable environments. Thus, I expect to find a relationship between personality and preference for certain worship styles; whereby introverts will significantly favor more traditional type services, and extraverts will significantly favor more contemporary type services.

For the purposes of this study, a traditional service is defined as a service in which hymns, organ playing, congregational readings, prayer, and preaching are a common part of the service. These types of services tend to be more liturgical, quiet, and simple in structure. What is meant by a contemporary service is a service in which choruses, dramas, dancing, videos, large bands, prayer, and creative delivery of the message are a common part of the service. These types of services tend to be more elaborate, loud, and complex. In fact, these two extremes exist on a continuum on which most church services would lie somewhere between the extremes.

**METHOD**

**Participants**

Those who participated in this study were 36 randomly selected undergraduate students from John Brown University, a small private four-year liberal arts college in Northwest Arkansas. Participants were emailed an online survey with a request to voluntarily complete the survey and submit it.

**Materials**

Participants completed a 50-item questionnaire designed to measure participants' introversion or extroversion tendencies. The first 36 items of the survey were adapted from a segment of the Myers-Briggs Type Indicator (MBTI) inventory. Examples of items are: “I get energy from interacting with people” and “I like to avoid crowds and seek quiet”. Participants marked their response to each item as either true or false. The last 14 items of the survey were developed by the experimenter, and were designed to measure participants’ preference for either liturgical or contemporary type services. Examples of items are: “It is important to worship God in creative ways” and “I prefer singing hymns over praise choruses”. Participants marked their response to each item as either true or false. Answers indicating introversion and preference for traditional services were assigned a score of one, and answers indicating extraversion and preference for contemporary services were assigned a score of zero.
were assigned a score of two on the questionnaire.

**Procedure**

Participants were randomly selected and accessed via email. Participants were encouraged to willingly volunteer to fill out an online survey. An implied informed consent was stated at the top of the online survey. Participants’ responses were automatically placed into an online survey database.

**RESULTS**

A Pearson \( r \) correlation was used to analyze the data collected over personality types and preferred worship service type. The data analysis revealed a significant relationship found between personality type and service style preference, \( r(34)=.57, p<.001 \). Introverted people appear to prefer more traditional services, while extroverts appear to prefer more contemporary services (see Figure 1).

**DISCUSSION**

As predicted, participants in the present study demonstrated a significant correlation between service preference and personality type. Participants who were extraverted tended to prefer contemporary service. Participants that were more introverted tended prefer more traditional services.

These results support previous research by Campbell and Hawley’s (1982) which found that extraverts prefer environments with higher levels of stimulus than introverts. Their study specifically focused on preferred study environments in relation to extraversion and introversion. Additionally, these findings support the studies done by Frunham and Allass (1999), Furnham and Strbac (2002), and Morgentern, Hodgson and Law (1974) that indicate that extraverts are not as affected by distractions as introverts are.

This study is limited in its generalizability. The sample used in this study reflects the population of a small Christian university in Northwest Arkansas. Thus, the results are descriptive of the John Brown University population, but may not be descriptive of other populations. The validity of the test is also questionable. Several of the survey items may not accurately measure what they attempt to measure. Thus, a revision of the questionnaire is desirable if this test were ever reproduced.

Future studies should seek to target samples that are more representative of the variables tested in this study. Research done on samples taken directly from traditional or contem-
porary church congregations could greatly contribute to the findings of this study. If replicated, a larger sample size could be used to increase the reliability of the study.

Results from this study confirm Eysenck’s theory of cortical arousal. It supports the idea that extraverts prefer and function better in environments that are high in external stimuli, while introverts prefer and function better in environments low in external stimuli. This study could also have significant implications in accounting for differences in religious circles. It appears that many external variables could be attributed to religious preference. This study is a significant step towards further studies in this area.

The present study found that more introverted individuals tend to prefer more traditional services, while extraverted individuals tend to prefer more contemporary services. Results from this test indicate that different religious preferences can be attributed to such factors as personality types. Research on religiosity and religious preferences are limited. Thus, this study greatly contributes to the advancement of research in this highly uncharted field of study. It raises questions about the effects of an individual’s characteristics in engaging in certain religious practices.

REFERENCES

Appendix
Online Survey

The purpose of this survey is to collect and analyze data for a Research Methods project at John Brown University. The data and results of this survey will remain confidential at all times. The survey should take 10 minutes to complete. To fill out, read the question and select the appropriate response. Participation in this survey is voluntary and you may choose to not respond. You may also stop taking the survey at any time. If you are under 18, please do not respond to this survey.

1) I get energy from interacting with people.
   True   False
2) If I go to a large social function I will not want to stay long.
   True   False
Personality and Worship Preference

3) I often think out loud.
   True   False

4) I have quiet energy from within.
   True   False

5) I like to talk less and think quietly inside my head.
   True   False

6) I figure things out by talking about them.
   True   False

7) I prefer to solve problems alone, perhaps asking others' opinions once I have the options figured out.
   True   False

8) While I enjoy other people, being with them does drain my energy.
   True   False

9) I like to be around people a lot.
   True   False

10) I may like to be alone part of the time, but knowing when I'll be with people is very important.
    True   False

11) I like to be the center of attention.
    True   False

12) I prefer a small group of people I already know.
    True   False

13) I proceed cautiously in meeting people.
    True   False

14) If I have a problem I am quick to turn to others to share it.
    True   False

15) I like to spend time alone, and feel comfortable being alone.
    True   False

16) I develop ideas through discussion.
    True   False

17) I like to have a lot of friends.
    True   False

18) I would rather do a big project alone or with one other person, than to work closely with seven or eight people.
    True   False

19) I like to avoid crowds and seek quiet.
    True   False

20) I like working in teams.
    True   False

21) I like to talk a lot
    True   False

22) Others see me as shy, quiet, and inhibited.
    True   False

23) I am expressive, outgoing, enthusiastic, and uninhibited.
    True   False

24) I tolerate noise and crowds.
Mark H. Taube

25) I am energized by ideas, feelings, and impressions.  
   True   False
26) I am private, self-contained, and reserved.  
   True   False
27) I am energized by action, people, and things.  
   True   False
28) I like meeting new people, and I meet people readily.  
   True   False
29) I share personal information easily.  
   True   False
30) I prefer to focus on one thing at a time.  
   True   False
31) I am different in public and in private.  
   True   False
32) I am easy to get to know.  
   True   False
33) I prefer to do lots of things at once.  
   True   False
34) I have a rich inner life.  
   True   False
35) I have a single layered personality; I tend to be the same in public and in private.  
   True   False
36) I am reluctant to share personal information.  
   True   False
37) I enjoy being in very sociable environments.  
   True   False
38) I worship God best in quiet settings.  
   True   False
39) It is important to worship God in creative ways.  
   True   False
40) I prefer singing hymns over praise choruses.  
   True   False
41) Creedal readings are an important part of a church service.  
   True   False
42) I like church services to be consistent from one week to another.  
   True   False
43) It is important to worship God in artistic ways.  
   True   False
44) Church services should be fun.  
   True   False
45) Church should be a place of loud celebration and rejoicing.  
   True   False
46) I am distracted easily when other people raise their hands in worship services.  
   True   False
47) I am easily bored by quiet services.
Personality and Worship Preference

True   False
48) I like interacting with people in worship services.
    True   False
49) I prefer casual worship environments.
    True   False
50) I like worship services that are simple in structure.
    True   False

Don’t forget to submit your research paper (and other outstanding work you have done in other psychology classes) to be considered for the 2007 issue of IFPS. It will be reviewed by the Advanced Research Seminar class and the revision process will be completed in the Fall of 2006. It is a great learning experience and there is nothing like seeing your words in print. It will go on sale in the JBU Bookstore in January 2007.
The Relationship Between Parent-Child Affection and Dating

Laura L. Kiehlbauch

Research suggests that adolescents’ dating relationships and expectations are linked to their relationship with their parents (Furman, 2002). The hypothesis is that young men and women who receive high levels of affection from their parents will feel less obligated to date, will begin dating later, and will date with less frequency than those who do not receive the same amount of affection from their parents. Fifty-seven undergraduate students completed a 27-item survey online. The results, which suggest that adolescents who are close to their fathers have fewer dating relationships, have implications for fathers’ relationships with their children. Future research could examine how the presence or absence of a father figure affects dating patterns among girls whose biological father is absent.

With the urbanization of society emerged a stage of life, called adolescence, during which youth are caught between childhood and adulthood (Balswick & Balswick, 1999). Parents work outside of the home, allowing youth more independence. At the same time, adolescents are still financially dependent on their parents, unable to fully enter the work force because of the advanced education and training that is often required. Adolescents are further caught between childhood and adulthood as they begin to move away from their parents and develop their own identity, largely influenced by peer-relations. One important type of peer-relationship is adolescents’ relationship with members of the opposite sex. As children enter adolescence, their thoughts about the opposite sex increase, and they then begin to interact with them (Furman, 2002). Group dating tends to occur with pairs of males and females going out together. Finally, a dyadic relationships form. As adolescents continue to mature, their dyadic relationships provide the support and caring that characterize adult romantic relationships.

Research suggests that adolescents’ dating relationships and expectations are linked to their relationships with their parents (Furman, 2002). A study by Butcher (1999) found that daughters’ sexual involvement and intimacy in dating relationships are influenced by the quality of their parents’ involvement in their lives. The same study also indicates that the quality of a young woman’s dating relationship appears to be related to how close she is to her father and quality of their emotional relationship. On the other hand, Clark and Kanoy (1998) found that
father-daughter intimacy, which is lower in divorced families than in families where the parents are still married, does not appear to have any affect on the levels of trust, anxiety, and intimacy in daughters’ dating relationships.

Gorham (1995) examined the influence of a paternal presence on females’ dating relationships by comparing young women from divorced, widowed, and intact families. No difference was found between the levels of intimacy experienced in dating relationships by the young women from the three different family types. Nevertheless, the research did suggest that females whose parents are divorced tend to experience more turnovers in their dating relationships and are in shorter relationships than girls from widowed families or families in which both parents are present.

From the above research, it is clear that the level of intimacy girls have with their fathers influences their dating relationships. When results from the study by Clark and Kanoy (1998) are combined with the results of Gorham’s (1995) research it is possible to infer that young women who are less intimate with their fathers have more dating relationships than young women who are more intimate with their fathers. The purpose of the present study is to test the truth of this statement and to discover if the amount of affection both male and female adolescents receive from both their parents influences when they begin to date, their motivation for dating, and the frequency of their dating relationships. While the above research looks at elements of this topic, this exact question remains to be unanswered. The hypothesis is that young men and women who receive high levels of affection from their parents will feel less obligated to date, will begin dating later, and will date with less frequency than those who do not receive the same amount of affection from their parents.

**METHOD**

**Participants**

The sample consisted of 57 undergraduate students at John Brown University. Twenty-four of the respondents were men, and 33 were women. Ages ranged from 18 to 25, with a mean age of 20.23. Men’s average age was 20.37, and women’s average age was 20.12. Twenty-three percent of students were freshman, 30% were sophomores, 30% were juniors, and 17% were seniors. Fifty-eight percent of the population was not currently in a dating relationship, 28% were dating, 9% were engaged, and 5% were married.

**Materials**

Data were collected through a 27-item survey constructed specifically for this study (see Appendix). The first 5 questions were open ended and asked students about their dating history. The next 14 questions asked participants to rank the quality of their relationship with their mother, father, and dating partner and how those relationships impact their sense of self. Using Gary Chapman’s five love languages (Chapman, 2000), four questions asked students how their mother, father, and dating partner best express love and how they best receive love. The final four questions asked demographic information. The survey took approximately five to ten minutes to complete.

**Procedure**

A group of 100 students from John Brown University was selected from the undergraduate student population. They received an e-mail, asking them to fill out a survey available through an online link.
A reminder was sent out several days later. The surveys were submitted electronically in a way that preserved anonymity. Informed consent was indicated by submission of the survey. Out of the 100 students contacted, 65 returned the survey. Because necessary data was incomplete, 8 of the 65 returned surveys were excluded from analysis.

**RESULTS**

Pearson r correlations were used to compare the number of dating relationships males and females had been in and the age at which they started dating with how close they are to their parents, how often their parents expressed love for them, and the degree to which they felt their parents loved them while they were growing up. There was a significant negative correlation between the number of dating relationships males had been in and how close they are to their fathers, $r = -.431, p < .05$. There was also a significant negative correlation between the number of dating relationships females had been in and how close they are to their fathers, $r = -.511, p < .05$. The age at which females began to date correlated positively with how close they are to their fathers, $r = .447, p < .05$, and the degree to which females felt loved by their fathers while they were growing up, $r = .544, p < .01$. Significant and nonsignificant correlations are listed in Table 1.

**DISCUSSION**

A young man’s relationship with his parents, how much he feels they love him, and how often they express their love for him does not appear to be related to the age at which he begins dating or the number of dating relationships he has, with one exception. Young men who are close to their fathers have fewer dating relationships. Likewise, a young woman’s relationship with her mother, how loved the young woman feels by her mother, and how often the young women’s mother expresses love for her does not seem to be related to the age at which the young woman begins dating or how many dating relationships she has been in. However, the closer a young woman is to her father, the older she is when she starts dating and the fewer dating relationships she has. Furthermore, young women who felt loved by their fathers growing up will be in fewer dating relationships than young women who did not feel as loved.

This study failed to address young men’s and women’s motivation for dating as it relates to their relationship with their parents. The survey asked many questions that could be used to make inferences about motivation, such as the questions based on Chapman’s five love languages. However, these questions were not very easy to statistically apply to the study. In retrospect, the survey should have asked participants to rank their motivation to date on a five-point scale with 1 being low and 5 being high. Responses to this question could have then been correlated with how close young men and women are to their parents, how often their parents expressed loved for them, and how loved they felt by their parents while they were growing up.

Therefore, disregarding motivation, the present study’s hypothesis was fully supported only by young women’s relationship with their fathers. This is consistent with the implication made from Clark and Kanoy’s (1998) and Gorham’s (1995) research that young women who are less intimate with their fathers will have more dating relationships. The hypothesis is supported only in part by young
### Table 1

**Correlations**

<table>
<thead>
<tr>
<th></th>
<th>Number of Dating Relationships</th>
<th>Age at which Dating Began</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male (df=20)</td>
<td>Female (df=31)</td>
</tr>
<tr>
<td><strong>Close to Mother</strong></td>
<td>$r = .050$</td>
<td>$r = -.028$</td>
</tr>
<tr>
<td><strong>Close to Father</strong></td>
<td>$r = -.431^*$</td>
<td>$r = -.245$</td>
</tr>
<tr>
<td><strong>How often Mother</strong></td>
<td>$r = .108$</td>
<td>$r = .027$</td>
</tr>
<tr>
<td><strong>Expressed Love</strong></td>
<td>$r = -.290$</td>
<td>$r = -.056$</td>
</tr>
<tr>
<td><strong>How often Father</strong></td>
<td>$r = .058$</td>
<td>$r = .098$</td>
</tr>
<tr>
<td><strong>Perceived Maternal</strong></td>
<td>$r = -.374$</td>
<td>$r = .511^*$</td>
</tr>
<tr>
<td><strong>Affection</strong></td>
<td>$r = -.374$</td>
<td>$r = .511^*$</td>
</tr>
</tbody>
</table>

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

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Parental Affection and Dating
men’s relationship with their father.

The reason young men who are close to their fathers have fewer dating relationships may be that in receiving their father’s approval and support, they do not need to try to find it in other relationships. The same reason may explain why young women who are close to their fathers and who feel loved by their fathers begin dating later and experience less turnover in their dating relationships. It may also be that their father’s provide sufficient male affection and support to make their daughters feel loved and appreciated by the opposite sex. Consequently, such young women may not have the same need to look for love in other relationships as do women who are not close to their fathers. The reason that males’ and females’ relationship with their mother does not affect the age at which they begin dating or the number of dating relationships may be due to the more nurturing and affectionate role mother’s traditionally have within the family. Maternal affection may therefore be taken for granted compared to paternal affection.

On the other hand, the results in the study may be due to variables other than parent-child relationships. Research by Larson, Spreitzer, and Snyder (1976) found relationships between socioeconomic factors and the likelihood of adolescent dating. Adolescents who spend more time studying and whose parents have white-collar jobs are less likely to date than those who spend less time studying and whose parents have blue-collar jobs. Furthermore, black males, who are more likely come from lower socioeconomic backgrounds, are more likely to date than white males. These findings suggest that people from high socioeconomic backgrounds devote more time to education and occupations, therefore having less time to date. Larson, Spreitzer, and Snyder (1976) also found that an adolescents’ likelihood of dating was influenced by family factors. Young adults from large families are less likely to date than those from small families. This would also suggest that the amount of free time one has influences whether or not they date as people from large families are likely to spend more time taking care of family members.

There are several limitations with the present study. First, results may not be generalizable. Because participants in the present study are students at a small, private, Christian college, they were most likely to come from Christian homes of a high socioeconomic status. Consequently the results may not apply to a secular population of a low socio-economic status. A second limitation in this study is the lack of an operational definition of dating. Participants may have defined dating in different ways. For example, one young woman said that she began dating at the age of 8 and has been in 20 different dating relationships. It may be that she had a more casual definition of dating than the young man who said he did not begin dating until he was 18 years-old and has been in two dating relationships. A third limitation is the failure of the study to truly address the impact of parent-child relationships on adolescent’s motivation to date. Future research should look at how parent-child affection affects adolescents’ motivation to date.

Furthermore, future research could compare how girls’ relationships with their father relate to the age at which girls’ begin to date and the number of dating relationships they have been in among girls of high and low socioeconomic status. Moreover, because
single-parents homes are more common among people of low socioeconomic status, such a study should also take into account the presence or absence of girls’ father. Future research could also examine how the presence or absence of a father figure affects dating patterns among girls whose biological father is absent. Furthermore, future studies could examine the influence of maternal affection on girls’ dating patterns when the father is absent.

The results of the present study have implications for fathers’ relationships with their children. It appears as though children’s intimacy with their father influences the intimacy they experience with others. Further research, such as how father-child intimacy influences the quality of adolescent’s dating relationships, should be done to see the exact nature of this relationship. As it is, previous research shows that adolescents who start dating at a young age and who have many different dating relationships struggle with adjustment (Furman, 2002). They may also be in danger of becoming over involved in their dating relationships. Consequently, fathers should therefore work to develop close, supportive relationships with their children in order to empower their children to have healthy relationships.

REFERENCES

Appendix A
The following survey is part of a research project for PSY 2393: Research Methods at John Brown University. The purpose is to collect data about student’s family and dating experiences. Only students age 18 or older may participate in this survey. Your participation is voluntary and will not be rewarded or punished in any way. The survey should only take 5 to 10 minutes to complete. You do not have to answer all or any of the questions. Your answers will be received anonymously and be kept confidential. By clicking submit, you are giving your consent to your participation in this study. If you have any questions about the study or survey, contact Laura Kiehlbauch (kiehlbauchl@jbu.edu, or x 1491). If you have any questions about the ethicality of this project or the research procedure, contact Dr. Rick Froman (rfroman@jbu.edu). Your participation is greatly appreciated!

Please respond to the following questions with the number that best describes you:
How many dating relationships have you had?  _________  
At what age did you begin dating your first dating relationship?  _________  
Estimate in days the length of your longest dating relationship?    _________  
Estimate in days the length of your shortest dating relationship?    _________  

I started dating because:
   a. I was really attracted to the individual
   b. I wanted to feel loved
   c. Everyone else was doing it
   e. To rebel against my parents
   f. Other reason(s)  Please specify:
   g. I’ve never dated

Please answer the following questions. Some of the questions ask about a dating relationship. If you have never been in a dating relationship, do not respond to the questions related to dating.

10. I am close to my mother:
    Distant  1------------2-------------3-------------4-------------5    Close

11. I am close to my father:
    Distant  1------------2-------------3-------------4-------------5    Close

12. I am close to my boyfriend/girlfriend:
    Distant  1------------2-------------3-------------4-------------5    Close

13. My mother expressed her love for me:
    Rarely  1------------2-------------3-------------4-------------5    Often

14. My father expressed his love for me:
    Rarely  1------------2-------------3-------------4-------------5    Often

15. My (current or most recent) boyfriend/girlfriend expresses his/her love for me:
    Rarely  1------------2-------------3-------------4-------------5    Often
16. Growing up, I felt like my mother ______ love me:

Did not 1---------------2---------------3---------------4---------------5 Did

17. Growing up I felt like my father ______ love me:

Did not 1---------------2---------------3---------------4---------------5 Did

18. I feel like my (current or most recent) boyfriend/girlfriend ______ love me:

Does not 1---------------2---------------3---------------4---------------5 Does

19. My mother affirmed my individuality:

Rarely 1---------------2---------------3---------------4---------------5 Often

20. My father affirmed my individuality:

Rarely 1---------------2---------------3---------------4---------------5 Often

21. My (current or most recent) boyfriend/girlfriend affirms my individuality:

Rarely 1---------------2---------------3---------------4---------------5 Often

22. I am confident in who I am as an individual:

Not Confident 1---------------2---------------3---------------4---------------5 Very

Confident

23. Dating someone makes me feel:

No More Much

More Complete 1---------------2---------------3---------------4---------------5 Complete

Please rank the following from most frequent (1) to most seldom (5):

24. My mother expressed her love for me through:

_____ Words of affirmation

_____ Acts of service

_____ Gifts

_____ Quality Time

_____ Physical touch

25. My father expressed his love for me through:
Laura L. Kiehlbauch

_____ Words of affirmation          _____ Quality Time
_____ Acts of service          _____ Physical touch
_____ Gifts

26. My boyfriend/girlfriend expresses his/her love for me through:

_____ Words of affirmation          _____ Quality Time
_____ Acts of service          _____ Physical touch
_____ Gifts          _____ I haven’t dated

27. I feel the most loved when people express their love for me through

_____ Words of affirmation          _____ Quality Time
_____ Acts of service          _____ Physical touch
_____ Gifts

Please choose the responses that describe you:

1. Sex:  Male  Female

2. Age:  18 19 20 21 22 23+

3. Year:  Freshman  Sophomore  Junior  Senior

4. Status:  Single  Dating  Engaged  Married
Most research on eating behaviors pertains more to eating disorders than to the eating attitudes of average individuals. While these average persons may not exhibit the extreme eating attitudes of those with eating disorders, they nevertheless develop eating behaviors on the basis of certain important internal and external factors. The current study examines the relationships between eating attitudes and temperament in a sample of college students. Twenty-three students responded to an anonymous survey. Results indicate no difference in eating attitudes and temperaments between upperclassmen and lowerclassmen. Also, factors such as anger and fear are significantly correlated with dieting and oral control. Future research should employ a larger sample size and incorporate external factors other than gender and age.

What factors influence college students’ decisions to eat or avoid eating? Almost all American citizens accept the archetype of the frazzled student driven to consume Pop-Tarts and Cheez-Its in bulk by the power of a monster called Stress. Beneath the stereotype, however, serious influences do exist. Students unconsciously incorporate factors from friends, family, and their own personality into their attitudes towards the role of food in their lives. The purpose of this study is to investigate relationships between body mass index, temperament, gender, and college classification in the formation of eating attitudes.

Numerous studies can be found on the topic of college students and food, perhaps because undergraduates are readily available in easily classifiable groups for research. A more serious reason for the quantity of research on the eating habits of college students is that students comprise a significant percentage of eating disorder cases in America (Rozin, Bauer, & Catanese, 2003). Thus, most of the research on this topic pertains directly to eating disorders such as anorexia nervosa, and not to the eating attitudes of more average or overweight individuals (Worobey 2002). While these average persons may not exhibit the extreme eating attitudes of those suffering from a diagnosed eating disorder, they do formulate their perceptions of food and eating on the basis of certain important internal and external factors.

For example, studies have shown significant gender differences in meal termination (Zylan, 1996). Women are more inclined to cease eating when they are no longer interested in the taste of the food,
while men typically tend to eat until the food is all gone, and then stop eating (Zylan, 1996). These distinctions imply that men and women have based their perceptions of food and the act of eating on different factors.

Another factor that may influence one’s attitudes toward food is whether or not one participates in a diet. Oakes and Slotterback (2002) investigated differences in dieting status that might influence perceptions of food. Older, middle-aged, and young adult dieters were found to focus on fat content and calorie content as the most important aspects of foods. Non-dieters in the same age groups tended to choose freshness and lack of processing as important factors in choosing foods (Oakes & Slotterback, 2002). These results indicate that while gender did not vary significantly, dieting status did significantly influence the means by which individuals chose which foods to eat.

Mooney and Walbourn (2001) investigated the motives behind avoidance of a particular food in college students and found that men avoided certain foods simply because of an aversion to flavors. Women, on the other hand, often actively avoid foods they truly enjoy. This avoidance was found to be based on weight concerns and calorie content (Mooney & Walbourn, 2001). Mooney and Walbourn (2001) also found that college students avoid foods for ethical reasons (i.e. adopting a vegetarian lifestyle to avoid killing animals for food), though to a lesser degree than for weight concerns.

Rozin, Bauer, and Catanese (2003) investigated similar variables in an expansive study of a wide range of eating attitudes and behaviors. Many previous studies focused only on one or two aspects of eating behaviors, such as gender or age, leaving what Rozin, et. al. (2003) believed to be “gaps” in the theory of eating behaviors. The 2003 study was an attempt to fill in the gaps by including factors such as race, religion, and socioeconomic class as well as eating behaviors, health beliefs, and beliefs about food quality and amounts. The results supported prior evidence that young female adults place higher importance on physical appearance and weight, are more likely to “binge and purge,” and hold more negative views towards food than men do (Rozin, Bauer, & Catanese, 2003). In addition, the results indicated that races such as Hindus and South Asians may be the least concerned about dieting and weight. Socioeconomic class also showed some effect in that as social class increased, weight and health concerns increased as well.

Temperament may also be a significant factor influencing the eating attitudes an individual formulates. Worobey (2002) conducted a study comparing five temperament dimensions (emotional distress, activity, sociability, anger, and fear) and three eating attitude variables (dieting, bulimic food preoccupation, and oral control) in normal weight and overweight participants. The results indicated not surprisingly that overweight women report much lower activity levels than the participants of normal weight (Worobey, 2002). In addition, slightly higher scores in emotional distress, fear, and anger were present for the overweight female participants (Worobey, 2002). Both overweight men and women scored lower on oral control than their normal weight counterparts. These results indicate a pattern of decreased propensity for activity, increased tendencies towards negative emotionality, and a marked lack of oral control in overweight individuals. With further study, such personality factors could some day be identified and isolated as predictors of excess weight or obesity in such a way that individuals would be able to do some-
thing to prevent gaining the unhealthy weight.

Based on the previous research, it can be asserted that one’s perceptions of food, health, and the act of eating are based on a complex foundation of gender, social, and personality factors. The purpose of the present study is to examine the eating attitudes of college students with respect to their gender, temperament, college classification (freshman, sophomore, etc.), and body mass index. As time goes by and students get more comfortable with themselves and where they’re going in life, upperclassmen most likely are more accepting of their bodies as they are. On the other hand, underclassmen who have just entered the competitive college realm will understandably be more concerned with their weight and appearance. Thus their eating attitudes and temperament will be more negative even though they have a normal BMI. I predict that lowerclassmen, being younger and less experienced, will exhibit both negative eating attitudes and a negative temperament more than upperclassmen will.

**METHOD**

**Participants**

A random sample of 79 student mailboxes was chosen to receive the questionnaire. Twenty-three usable surveys were returned. The participants were college students in all four standard academic classifications, drawn from the undergraduate population at John Brown University. Three males and 20 females responded, with four freshman, six sophomores, five juniors, and eight seniors. All were between the ages of 18 and 24.

**Materials**

I employed a questionnaire consisting of 38 Likert-type questions with responses on a five-point scale, and seven demographic items to account for the BMI calculation, age, gender, and college classification. The Likert-scale items were designed to measure levels of tendency in two superordinate categories, Temperament and Eating Attitudes. Temperament was divided further into two basic categories: Emotionality (E), and Activity (A). These two were further divided into four subcategories: E-Fear (EF), E-Anger (EA), A-Tempo (AT), and A-Vigor (AV). The items in these four subcategories were taken from *Plomin’s EASI-III Questionnaire*. The Temperament superordinate category contained a total of 19 items. The Eating Attitudes superordinate category was divided further into the following four subcategories: Dieting (D), Oral Control (OC), Food Preoccupation (FP), and Emotional Eating (EE). The Likert scales recorded a score indicating a high or low tendency in each subcategory. For example, a high total score in the Emotionality-Anger subcategory indicates a high tendency towards an angry temperament. The items in the Dieting, Oral Control, and Food Preoccupation subcategories were taken from the EAT-40 survey (Garner et al. 1982) and Rozin’s Food and Life Questionnaire (2003). The questions were chosen strategically so as to protect the validity of the measures. Wherever possible I retained all of the items in a category, and cut only questions that were duplicates of other items in order to save space. I designed the Emotional Eating items myself to complement the eating attitude factors from the other surveys. A total of six filler questions were included at random to desensitize the participants to the nature of the research and keep the hypothesis undisclosed.
These filler questions have no value and their scores will not be included in the final calculations.

**Procedure**

Upon arrangement of the survey questions in a random order, I mailed the questionnaire to 79 students. An addressed envelope was included with each survey to increase the participants’ ease and convenience. Any surveys not completed fully, or completed by someone who does not fit the criteria (under age eighteen, or in graduate school) were discarded. The remaining surveys were scored, and the data entered into a computer program (Excel) for scoring. Body mass index was calculated for each participant using the demographic information from the survey and the National Center for Disease Control’s BMI calculator on their Health and Fitness website.

**RESULTS**

According to a chi-square test, males returned the survey at a rate significantly less than can be expected by chance, $\chi^2(1)=6.962, p=.008$. (see Fig. 1.) Only three out of the 23 returned surveys were from males. The scores for each participant were totaled in nine categories, five of which were temperament measures while four were measures of eating attitudes. An independent groups t-test was used to compare the scores of upperclassmen with those of lowerclassmen. No significant difference was found between academic class and temperament scores, $t(21)=-0.56, ns$. In addition, no significant difference was found between academic class and eating attitudes, $t(21)=-1.02, ns$. Several significant correlations were found between score categories. Positive relationships were found between categories BMI and Dieting, $r(21)=.439, p=.04$; Dieting and Food Preoccupation, $r(21)=.549, p=.04$; Anger and Vigor, $r(21)=.480, p=.04$; Anger and Dieting, $r(21)=.543, p=.04$; and Fear and Oral Control, $r(21)=.558, p=.04$. A negative relationship was found between Vigor and Emotional Eating, $r(21)=-.535, p=.04$.

**Discussion**

There are several explanations that may account for the low male return rate in the current study. It is possible that males generally participate in surveys less than females. Another possibility is that perhaps the males were not nearly as interested in the survey topic (personality and preferences) as females might be.
Regarding the lack of significant result between upperclassmen and lowerclassmen in both the temperament and eating attitudes assessment, it is unlikely that the small sample size was a significant factor. The results indicate that in a larger sample, the results between classes would most likely appear in a range very similar to the one found in the current study. Two possible explanations are pertinent to these results. The reason no difference was found within the four or five year age difference between freshmen and seniors might be that the age separation between the groups is simply too small of a window of time for dramatic changes in temperament and eating attitudes to occur. Additionally, it seems likely that a proximity effect may influence this particular sample, given that it was taken from a co-ed body of undergraduate students. The fact that upperclass men and lowerclassmen live (in dorms) and work (in classes) so closely with each other for the majority of their four or five college years may tend to produce the homogenous result found in the current study.

Positive correlations such as the five found in the current study, indicate that as one tendency in the dyad increases, the other tends to increase with it. In addition, a correlation means that the categories are related, but we cannot determine the direction of causation.
The positive relationships between BMI and Dieting, and Dieting and Food Preoccupation were expected from previous research. It has become common knowledge in the US that individuals with high BMIs are more likely to diet than those with low BMIs, and Dieting by its very nature seems to lend itself to a preoccupation with food. The relationships between Anger and Vigor and Anger and Dieting indicate that there may be a significant emotional component to a propensity for both Anger and Dieting (see Figs. 2 & 3). A positive relationship between Fear and Oral Control provides fertile ground for future research into eating disorders, and supports previous claims that eating disorders such as anorexia nervosa are the manifestations of the individual’s control issues. (See Fig. 4.) The negative correlation between Vigor and Emotional Eating indicates that as one tendency increases, the other decreases proportionately. Again, no causation can be determined, but the findings support the idea that individuals with more vigorous, active lives are less likely to eat emotionally. (See Fig. 5.)

Future research would do well to incorporate Worobey’s temperament and eating attitudes comparisons replicated in the current study with Rozin’s study of external influences on eating habits. Including factors such as race and socioeconomic class in Worobey’s categories might shed some light on how eating habits and temperament attributes generalize across cultures, religions, and economies.

**REFERENCES**


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The Arkansas Symposium for Psychology Students (ASPS) meets each year in April at various locations in Arkansas. This year (2006) in April it will meet at the University of Central Arkansas in Conway, AR. This is an excellent opportunity for you to build your resume for either a future job or graduate school applications. ASPS provides you the opportunity to orally present your research in a supportive atmosphere that simulates an professional conference. This is not a short trip (but it goes much faster in the presence of the scintillating company of your fellow presenters) so we will be staying overnight in Conway. It is well worth the trip to have a chance to participate in a professional research conference. See Dr. Froman if you are interested in attending this year.
Species Familiarity Related to Attitude Toward Species Preservation

Cynthia Faires

This study investigates the relationship between respondents’ familiarity with animals and their choice to preserve them. Dekay and McClelland (1996) found many factors that influence people’s decisions about animal preservation such as species’ phylogenetic status and ecological importance. Thirty-seven undergraduate students took part in the survey that measured the participants’ familiarity with certain pictures of animals. Then the participants played the part of a preservation program director and decided between two animals which animal to preserve. The majority (all but one) of the t-tests between familiarity and preservation choice were insignificant. Therefore, the hypothesis that familiarity would relate positively to preservation was not supported.

How much of an effect does attitude have on choices? The American Zoo and Aquarium Association says one of the bases for zoos and other wildlife habitats is the assumption that educating people about the different types of animals and actually letting them see and relate to animals will cause people to be more willing to try to preserve them in their natural habitat. Previous research suggests that there are similar opinions that influence people’s decisions about animal preservation like their related similarity to humans and their ecological importance (Dekay & McClelland, 1996). In addition, Dekay and McClelland (1996) found evidence that people value uniqueness and intelligence when evaluating animals for preservation. Other research testing grade school children (1-12) found that harmless invertebrates, amphibians, and biting and stinging invertebrates were unpopular across age groups (Badaracco 1973). In addition, mammals range highest on preference scales across ages, while fish and birds slightly behind (Badaracco 1973; Collins 1976). However, attitude and human familiarity may also play a part in the preservation process. Evidence from Priester, Nayanakkuppam, and Fleming (2004) suggests that attitudes and attitude strength have an influence on consideration and choice. Does this play significant part in an animal’s selection into a preservation program? The presence and maintenance of zoological gardens and/or seaquariums allows people access to rare or endangered animals and thus increases their desire to preserve them in their natural habitat. In this study preservation choice will be defined and measured by participants choice of one...

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animal over another for study and funding of a preservation program. Familiarity will be measured by a self-reported measure on a 7-point scale from unfamiliar to familiar. Based on previous this study hypothesizes that people will be more likely to want to make efforts to preserve animals with which they are more familiar.

**METHOD**

**Participants**
Eighty undergraduate college students at John Brown University, a small liberal arts college, in Siloam Springs, AR were randomly selected from a college email directory. The participants received an email with a link and directions to take the survey. Thirty-seven students replied and submitted the survey: 16 males and 21 females. No participants received money or other benefit for participating in the study. The return rate for the completed online surveys was 46.25%.

**Materials**
A self-developed survey (see Appendix) was emailed to perspective participants. A random list of the email addresses of eighty people enrolled at John Brown University received a link with the survey and the instructions.

The survey had two parts. The first part was a simple rating system from 1 to 7 where the participants rated a picture of an animal on a scale from 1 (unfamiliar) to 7 (familiar). There were 20 pictures of animals, four animals from each classification of vertebrate animals: birds, fish, amphibians, mammals, and reptiles.

The second part of the survey the participant acted as a research team director and chose between pairs which animal they were going to invest time, money and effort into preserving. The same animal pictures were used from earlier in the survey. Each classification of animal was paired with another previously rated animal from a different classification only once. There were 10 pairs of animals. The participants simply chose between the pairs of animals, which they would preserve.

**Procedure**
Initially the randomly selected participants received a link to the survey as well as preliminary information about the survey. Participants were not told the hypothesis of the research because this could affect their answers. On the online survey, the participants pressing the submit button agreed with the confidentiality of the survey. The surveys were submitted anonymously and the participants were informed that they could stop at any time or skip any questions they did not feel comfortable answering.

**RESULTS**
Ten two sample t-tests assuming equal variance were conducted to compare the differences in familiarity between groups that chose to preserve an animal compared to those who did not choose to preserve the animal. The t-tests conducted on each of the pairings

![Figure 1. 4th Paired Question with significant results shows the number of preservation choices and the mean familiarity with the animals.](image-url)
of animals in the survey yielded no significant difference found in 9 out of the 10 t-tests. The significant difference was found in one t-test, \( t(33) = -3.054, p = .004 \) (see Fig. 1). A one way ANOVA analysis of the means of the familiarity of participants with each species yielded significant results, \( F(4,180) = 13.317, p < .001 \) (see Fig. 2). Calculations that compare within groups to between groups show the significance of the ANOVA analysis (see Table 1). A multiple comparison was done between the different species of animals, which concluded that the participants were significantly less familiar with amphibians than all other animals. The multiple comparison analysis also found that participants were most familiar with birds significantly more than reptiles, fish and amphibians (see Table 2). Finally, a chi square non-parametric analysis was done on the number of choices for preservation of each species of animal to analyze the difference between the number of choices for each species which was significant, \( \chi^2 (4) = 16.71, p = .002 \) (see Fig. 3).

### Table 1. Within Groups for the ANOVA between Familiarity and Species Type

<table>
<thead>
<tr>
<th>Species</th>
<th>N</th>
<th>Mean</th>
<th>Var.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amphibian</td>
<td>37</td>
<td>11.54</td>
<td>31.31</td>
</tr>
<tr>
<td>Bird</td>
<td>37</td>
<td>19.41</td>
<td>27.14</td>
</tr>
<tr>
<td>Fish</td>
<td>37</td>
<td>14.83</td>
<td>23.58</td>
</tr>
<tr>
<td>Mammal</td>
<td>37</td>
<td>17.89</td>
<td>18.04</td>
</tr>
<tr>
<td>Reptile</td>
<td>37</td>
<td>15.59</td>
<td>26.58</td>
</tr>
</tbody>
</table>

\( F(4,36)=32.6178, p<0.001. \)

### Table 2. Relationships between Species in the ANOVA

* indicates significant value

<table>
<thead>
<tr>
<th>Compare</th>
<th>HSD</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amphibian to Fish</td>
<td>*6.24</td>
<td>0.001</td>
</tr>
<tr>
<td>Amphibian to Bird</td>
<td>*14.88</td>
<td>0.001</td>
</tr>
<tr>
<td>Amphibian to Reptile</td>
<td>*7.67</td>
<td>0.001</td>
</tr>
<tr>
<td>Amphibian to Mammal</td>
<td>*12.01</td>
<td>0.001</td>
</tr>
<tr>
<td>Fish to Bird</td>
<td>*8.64</td>
<td>0.001</td>
</tr>
<tr>
<td>Fish to Reptile</td>
<td>1.43</td>
<td>0.850</td>
</tr>
<tr>
<td>Fish to Mammal</td>
<td>*5.78</td>
<td>0.001</td>
</tr>
<tr>
<td>Bird to Reptile</td>
<td>*7.21</td>
<td>0.001</td>
</tr>
<tr>
<td>Bird to Mammal</td>
<td>2.86</td>
<td>0.254</td>
</tr>
<tr>
<td>Reptile to Mammal</td>
<td>*4.35</td>
<td>0.018</td>
</tr>
</tbody>
</table>

### DISCUSSION

The hypothesis that people will be more likely to want to make efforts to preserve animals with which they are more familiar was not supported by this
research. For this to be supported, the majority (6 out of 10) of the t-tests should have shown a significant difference between familiarity and preservation choice. The single significant result was not enough to support the hypothesis. However, the results did lead to the conclusion that species type may play a significant role in species preservation. It also showed that there is a significant difference between the number of each species chosen for preservation and that animal species are not equally chosen for preservation. With this knowledge about how and why some species are chosen over others for preservation we can better understand and educate people about animals they are less familiar with. In addition, measures for preservation can be made on a more equal level between species.

In line with previous research by Badaracco (1973) and Collins (1976) there is evidence that amphibians were significantly less familiar than any other animal type. This research found that birds were more familiar than any other animal, which was different from the two previous studies; however, mammals averaged second in familiarity means. This may just mean that while people prefer mammals, they are more familiar with birds.

One shortcoming of the study is the findings are not generalizable to other sample groups that may be less familiar with animals in general than this college sample.

Possible explanations for these results may be that other things besides familiarity influence preservation attitude. It is likely that one of these aspects may be an animal’s species. This was shown by the one-way ANOVA; however, this was not the objective of the experiment.

Opportunities for future research could include more specifically studying other influences to attitudes about preservation. One suggestion for researchers replicating this study would be to narrow the range of animals to specifically species found in zoos rather than taking pictures of animals in various species. This would more accurately study the hypothesis as it relates to zoos and aquariums. Also, I would replicate the method used in Badaracco’s study (1973) and have pencil drawings instead of full color photographs to prevent people from choosing based on other aspects of the picture. In addition, it would be interesting to explore the findings that amphibians are less familiar than all other animal types. In addition, future studies can be done on how species type affects preservation choices. As well as, other things that relate to species preservation besides familiarity.

Probably the most promising aspect for further study should be the effect of educational training that zoos and aquariums provide and how that relates to preservation choice. A study into how intentional education about a specific animal type similar to that provided in a zoo setting affects a person’s attitude towards that animal's preservation would be the next step in this research.

In conclusion, although this research did not yield significant results, these findings suggest a limit to the use of the theory held by zoos and aquariums that familiarity contributes to preservation choice. However, results did show more information about what does influence choices made about animal preservation. Increased understanding about formation and effects of people’s attitudes about animals and their preservation is imperative to the
construction of better zoos, aquariums, and preservation agencies; these will all yield to better animal conservation and the ability to keep our earth beautiful longer.

REFERENCES

Appendix
Online Survey
Animals!

This research is part of a project for the Research Methods class I am in this semester. The duration of your participation will be limited to the length of time it takes you to fill out this survey. There is no other obligation or risk to you as a participant past filling out the survey. Confidentiality will be ensured because the surveys will remain anonymous and only be viewed by my faculty advisors and me. Your participation is voluntary and you are able to stop at any time during the survey. At the end is contact information for answers to pertinent questions about research and research subjects' rights, and whom to contact in the event of a research-related injury to the subject. Thank you for your time.

I am currently a:

☐ Senior
☐ Junior
☐ Sophomore
☐ Freshman

I am:  ☐ Male  ☐ Female
Species Familiarity and Preservation Attitude

My home state/country is ________________________________.

**Instructions for part I: Rate the following 20 animals based on how familiar you are with each animal.**

Ask yourself questions like: What is this animal? and Would I know where to go to find this animal?

Unfamiliar [ ] [ ] [ ] [ ] [ ] [ ] [ ] Very Familiar

Unfamiliar [ ] [ ] [ ] [ ] [ ] [ ] [ ] Very Familiar

Unfamiliar [ ] [ ] [ ] [ ] [ ] [ ] [ ] Very Familiar

Unfamiliar [ ] [ ] [ ] [ ] [ ] [ ] [ ] Very Familiar
Unfamiliar  □  □  □  □  □  □  □  Very Familiar

Unfamiliar  □  □  □  □  □  □  □  Very Familiar

Unfamiliar  □  □  □  □  □  □  □  Very Familiar

Unfamiliar  □  □  □  □  □  □  □  Very Familiar
Species Familiarity and Preservation Attitude

Unfamiliar

Very Familiar

Unfamiliar

Very Familiar

Unfamiliar

Very Familiar

Unfamiliar

Very Familiar

Unfamiliar
Cynthia Faires

Unfamiliar

Unfamiliar

Unfamiliar

Unfamiliar

Unfamiliar

Unfamiliar

Very Familiar
Species Familiarity and Preservation Attitude

Unfamiliar [ ] [ ] [ ] [ ] [ ] [ ] Very Familiar

Unfamiliar [ ] [ ] [ ] [ ] [ ] [ ] Very Familiar

Unfamiliar [ ] [ ] [ ] [ ] [ ] [ ] Very Familiar

Unfamiliar [ ] [ ] [ ] [ ] [ ] [ ] Very Familiar

Unfamiliar [ ] [ ] [ ] [ ] [ ] [ ] Very Familiar

Instructions for the II, and final, part of the survey:
Pretend you are the director of an Animal Preservation Team and you must choose one animal from each of the following 10 pairs of animals. Time, effort and money will be spent on the animal you choose.
Species Familiarity and Preservation Attitude

OR

OR

OR

OR
If you agree with the terms informed consent at the top of the page and you have completed the survey please press the submit button to have your survey submitted.