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Full submission details are on page 4.

The Whitman Journal of Psychology

Table of Contents   Page

The Whitman Journal of Psychology

Content

The Whitman Journal of Psychology is devoted to publishing the research and writing of high school students. It is the intention of *The Journal* to provide a forum in which student-conducted research in the field of psychology may be recognized. *The Journal* contains research from many subject matters and is not limited to any specific type of study.

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Experimental Psychology

Morphemes and Syllables:
A Study on Natural Division of Words
Veronica Bunn
Advisor: Andrew Block
East Jessamine High School

Abstract

This study investigated the preference between dividing words into morphemes or syllables when reading. Three groups of 19 students were presented with the same list of 19 words. The first group was instructed to divide the words by morphemes, the second by syllables, and the third however they saw fit. Results showed no statistical significance for dividing words by morphemes; however, there was a large difference in the means of the control groups, suggesting that the directions were effective, as students are more exposed to syllables. Further research in this area would be needed to find a bias one way or the other. Implementing the results of such research in educational systems would make teaching reading and writing more efficient.

Introduction

When someone is spelling a word, they naturally divide it in their heads. There are two common ways to divide words; morphemes and syllables. A morpheme is the smallest meaningful unit in the grammar of a language (Payne, 1997), and a syllable is a unit of sound made of a central vowel surrounded by consonants (Loos, Anderson, Day, Jordan, and Wingate, 2004). This process is used in reading, writing and general word recognition activities.

Muncer and Jandreau conducted a study in 1984 in which 60 undergraduate subjects were presented with two sets of 12 stories of the "find-the-odd-word" test. The first set the words were presented in three different categories: (a) normally (four sets), (b) with morpheme breaks (four stories) and (c) with syllable breaks (four stories). The second set was presented under one of three conditions: normal presentation, syllable presentation or morpheme presentation. In this study, it was found that subjects scored the best on this task when presented with morphemes.

In 2005, Reichle and Perfetti did a word recognition study composed of three simulations. The first simulation examined token frequency, and the second examined the effect of derivations on token frequency. The third simulation showed that the number of different derivations that a word has, instead of the token frequency across these derivations affects processing of the base word. This study concluded that people have a tendency to divide words they are familiar with by morphemes, and words they are encountering for the first time by syllables.

This current research seeks to decide if there is a natural preference for dividing words one way or the other. If it was found that there was an unbiased preference for dividing words into either syllables or morphemes, this information could be used to reinvent the way children are taught to read and write, making the learning process faster and easier for both students and teachers.

Method

A study was conducted in order to decide if there was a natural preference for dividing words by either morphemes or syllables. This study was comprised of 57, 16 and 17-year-old high school juniors of both genders, and was conducted during three separate Advanced Placement English classes with 19 students in each group. The class instructor was given labeled folders, each including a worksheet with a list of the same words but different instructions.

The first two groups were control groups. The first group was provided with the definition of a syllable and given instructions to divide the words into syllables (Syllable Control). The second group was provided with the definition of a morpheme and was instructed to divide the words as such (Morpheme Control). The last group, the test group, was only given the instructions to divide the words as they saw fit.

Results from the two control groups were graded for accuracy in the division of words based on the instructions given. The test group was graded twice; once for accurate division by morphemes (Test: Morphemes), and then once for accurate division by syllables (Test: Syllables). Data analysis was done to show the differences between the groups.

Results

The test sample was 57 high school teenagers, 24 boys and 33 girls. The average age of the sample was 16.8 years.
Data derived from the experiment is shown in Table 1 (see appendix A).

A t-test was done with the control morphemes and test morphemes. The result was $t(36)=5.02$, $p<0.05$, meaning there was statistical significance. A t-test was also done with the control syllable group and the test syllable group. The result was $t(35)=3.34$, $p<0.05$, again meaning that the results were statistically significant. Because there was a large difference in the means of the Test (morpheme) and Test (syllable) groups (see Table 2 in appendix B), a post-hoc t-test was done between the mean difference of the Morpheme test/control groups and the mean difference of the syllable test/control groups. The result was that $t(36)=-.85$, $p>0.05$, showing no statistical significance.

Discussion

It is possible that the method of dividing words by syllables was more prominent in this study because children are taught about syllables and how to divide words by syllables early on in school. The first encounter most of the test subjects had with morphemes was in this study, and the higher exposure level to syllables could make one more apt to divide a word as such.

From the results of the initial t-tests between control morphemes and test morphemes and control syllables and test syllables it could be concluded that there was an effect for following directions, as shown by the large differences in the means between groups. This could possibly mean that morphemes are learned faster than syllables, although further research would be needed to prove this hypothesis.

It would be extremely difficult to find test subjects of the same age used in this study that had not had exposure to either morphemes or syllables. If further research is to be done it is suggested that the test subjects used are young children that have not had exposure to either morphemes or syllables in school. This would provide research that has not been tainted by what the children had learned, and could therefore be more useful to educators and education administrators in deciding how to teach children to read and write most efficiently.

Appendix A:

Table 1

Word	Control: Morphemes	Control: Syllables	Test: Morphemes	Test: Syllables
Unladylike	18	14	8	11
Water	12	19	4	15
Bio	10	16	7	12
Systematically	16	12	8	11
Library	7	14	9	10
Syllable	9	14	13	8
Gentlemanliness	17	13	6	11
Carrot	11	19	3	7
Replay	19	18	6	13
Desire	8	9	9	10
Deca	13	18	4	15
Boyishness	19	19	9	10
Uncover	16	16	7	12
Believable	13	8	12	7
Walked	19	7	5	14
Crocodile	6	11	11	8
Geo	10	16	10	9
Disconnect	17	17	16	13
Dogs	14	15	5	14

Table 2

Number of Words Correct in Different Test Groups
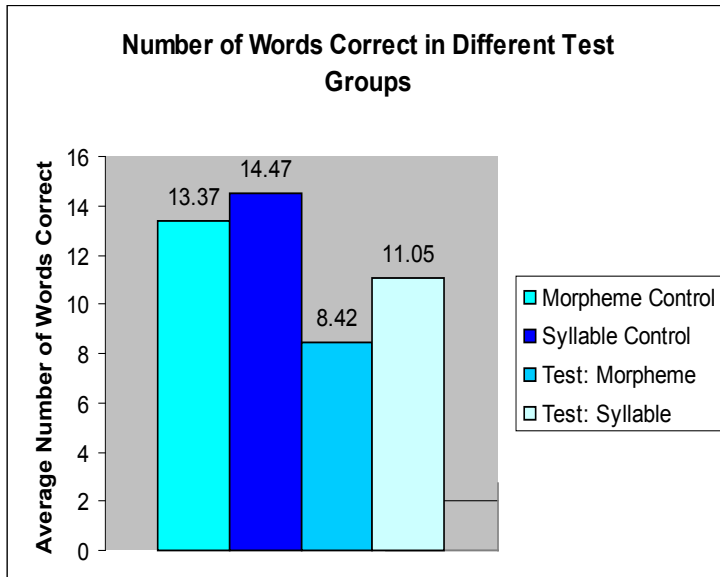
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Relationship between Genres of Top 30 Television Programs in the United States
and the Status of the U.S. Economy
Cameron Rotblat
Advisor: Derrick Owings
Cherry Hill High School West, Cherry Hill, NJ

Abstract

Studies have shown economic downturns have measurable impacts on the actions and beliefs of individuals, as well as correlations between certain genres of television shows and music and economic downturns. The goal of this study was to discover whether a relationship exists between the number of comedies and dramas in the top 30 television shows for a year and the state of the economy, either non-recession, pre-recession, or recession. The study had two hypotheses: 1) that there would be more dramas in the top 30 shows during pre-recession years than non-recession years 2) that there would be more comedies during recession years than non-recession years. Data analysis contradicted the first hypothesis and failed to provide strong support for the second.

Relationship Between Genres of Top 30 Television Programs in the United States and the Status of the U.S. Economy

Economic downturns can have a measurable impact on individuals and their personal attitudes and beliefs. For example, High school students place a stronger emphasis on the pay and the security of work of a potential job during a time of economic insecurity than during periods of economic security, (Gamberale, Bracken, & Mardones, 2008).

Anecdotal evidence from psychologists and psychotherapists suggests that to economic downturns also influence the way people make decisions. Daniel Howard, a marketing professor and consumer behavior specialist, claims that "people who concentrate on all the news [of an economic downturn] work themselves up emotionally and become much, much more likely to make unwise decisions" (Torbenson & Case, 2009). Psychotherapists report drastic increases in "aberrant social behavior" including addictions, domestic violence, child abuse, affairs, divorces, depression, anxiety, and suicidal ideation," during economic downturns (Formica, 2008).

Studies have also shown relationships between popular forms of entertainment and economic situations. In the United States and Canada, "rising unemployment in society is positively related to increased preference for crime drama among TV viewers" (Reith, 1996, p. 258). While the trend is not present on a micro-scale, macro-scale studies show that the relative popularity of crime drama as compared to other programming is correlated with unemployment. Additionally, there is a strong correlation between "pessimistic rumination in popular songs and newsmagazines" and "economic recession" (Zullow, 1991). In particular, studies have shown that "increased pessimistic ruminations in popular music have generally predicted changes in the American media and public's view of real world events with a one- to two-year lead time."

Methods

The study involved two hypotheses, one on television show genres during the two year period before recessions and one on television show genres during a recession. The first hypothesis: during the two year period before a recession ("pre-recession years"), more top 30 television shows are dramas than during non-recession years. The second hypothesis: during recession years, more top 30 television shows are comedies than during non-recession years.

In order to test the hypotheses about television shows and the economy, previously collected data from professional research institutions was used. This included a list of the 30 top Nielsen rated television shows for each year from 1962 to 1999. Nielsen television ratings represent an estimate of the number of people who watch a particular television show based on statistical sampling of the U.S. population (The Nielsen Company, 2009). The year 1962 served as the starting year for the data, because it was the first year that the number of televisions in the United States exceeded 50 million. A list of recession periods, as determined by the National Bureau of Economic Research (NBER), provided information on the economy. The NBER officially labels recessions based on changes in "real GDP, real income, employment, industrial production, and wholesale-retail sales" (National Bureau of Economic Research, Inc., 2008).

The data was analyzed to determine whether the most popular genre of television shows in the United States correlates with the state of the U.S. economy. The popular television shows were labeled as comedy, drama, or other based on the categorization of the show by The Internet Movie Database. Counts were made for each year of how many top 30 shows were in each category. The average numbers of comedy and drama shows were compared between recession, non-recession, and pre-recession years. Recession years were defined as years in which at least 3 months were labeled as recession by the NBER. Pre-recession years were defined as the two years directly before a recession. Non-recession years were defined as any years not labeled as recession or pre-recession.

Results

The average number of dramas and comedies for each type of year is detailed in tables 1 to 3.

An additional analysis was performed on the genres of the top five television shows for each type of economic year. The average numbers of comedies in non-recession, pre-recession, and recession year were all very close, and any differences were insignificant. Similarly, the average numbers of dramas during each type of economic year were also very close, with any differences being insignificant.

Table 1

TV Show Genres in Non-Recession Years			
Avg. # of Comedies	Comedy σ	Avg. # of Dramas	Drama σ
14.42	3.04	8.89	3.07

Table 2

TV Show Genres in Pre-Recession Years			
Avg. # of Comedies	Comedy σ	Avg. # of Dramas	Drama σ
15.50	3.02	8.43	1.81

Table 3

TV Show Genres in Recession Years			
Avg. # of Comedies	Comedy σ	Avg. # of Dramas	Drama σ
14.60	3.78	10.00	3.32

Discussion

The data shows that variations in average number of comedies and dramas for the three types of years are not significant. All of the averages are easily within one standard deviation of each other. The data provokes serious doubts about both hypotheses. The data seems to contradict the first hypothesis as the average number of dramas in pre-recession years is actually less than the average number in both non-recession and recession years. The data fails to strongly support second hypothesis as the average number of comedies is only slightly higher in recession years than in non-recession years.

The first hypothesis was based upon Howard Zullow's 1991 study, "Pessimistic rumination in popular songs and newsmagazines predict economic recession via decreased consumer optimism and spending." Zullow found an increase in pessimistic rumination in the U.S. top 40 songs during the two years before a recession. Based on Zullow's study, it seemed plausible that dramatic television shows, which are usually perceived as more tragic and pessimistic than comedies, would be more prevalent in the two years prior (or leading up) to a recession. However, the data contradicted the hypothesis. The average number of dramas during pre-recession years was actually less than the average number of dramas during non-recession years. Additionally, visual inspection of the raw data shows either no change or small decreases in the number of dramas during the two years before a recession. It is possible that the amount of pessimistic rumination in a television show is not related to the genre, but it seems likely that the trend discovered by Zullow may be less apparent in television.

The second hypothesis was based upon the common perception that escapist and comical movies and television shows are more popular during times of economic hardship. For example, "screwball comedy" was the popular type of film during the Great Depression (Gehring, 2008), as it provided an escapist outlet to those facing economic troubles. However, the data does not provide support for the hypothesis. The average number of dramas in the top 30 is in fact slightly higher during recession years than non-depression years. Instead of seeking comedy, television viewers may actually prefer drama during times of economic recession. Perhaps people watching others in difficult situations (a type of projection) is a more popular coping mechanism than fantasy or escapism.

There are a number of different directions that could be taken with similar studies. First, there are multiple ways to measure the relative popularity of comedy and drama television shows during a particular year. Instead of using a list of television shows by ratings, a list by share (percentages rather than numbers of viewers) could be used. Second, instead of simply counting the number of comedies and dramas each year, some type of weighting system could be used where the top viewed show is given more weight than the 30th most popular show. Third, data from other countries could be used as well. Fourth, studies could look at show cancelations during non-recession, pre-recession, and recessions to discover whether the state of the economy is correlated with what types of shows are canceled. Finally, different econometrics could be used. However, the study seemed to be an acceptable way to discover if there was a strong relationship between the popularity of different television genres and the state of the economy.

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The Influences on Teenagers to Accept Friend Requests from Unfamiliar Facebook Users

Nitesh V. Donti, Ida L. Yu, and Rachel G. Novosad
Advisor:Joseph Swope
Northwest High School

Abstract

Facebook is currently the most widely used social networking site worldwide. The term of "Facebook friend," however, does not necessarily imply a significant friendship in real life. Our study examined the reasons why some teenagers accepted Facebook friend requests from people whom they did not know. The study showed that 34% of those surveyed said they "often" or "very often" accepted friend requests from unfamiliar people. Having a large number of mutual friends, along with a genuine desire to meet a new person or gain a friend, were the most prevalent reasons. Teenagers seem to value trust more than they value attractiveness or popularity. This information could be useful to advertisers who target a young demographic group.

The Influences on Teenagers to Accept Friend Requests from Unfamiliar Facebook Users

When Facebook, a popular social networking website, was founded in 2004, its users were limited to Harvard College students. However, the website quickly became popular among college students across the nation. Facebook was originally aimed towards only college students, but in 2005 high schools were added to the network options. In 2006, companies were added as well, which allowed for a more diverse array of users (Zywica, 2008). The origin of the name comes from the concept of "face books." Many Ivy League schools would distribute face books that contained student pictures and small amounts of personal information to the incoming freshman in order for them to feel more connected with their fellow classmates. Mark Zuckerburg, a computer science undergraduate at Harvard at the time, took the concept a step further and created an internet-based version of such face books (Westlake, 2008). Today, Facebook's mission statement is "to give people the power to share and make the world more open and connected" (Zuckerburg, 2009). Facebook has quickly ascended the ranks to become the number one social networking site used worldwide with over 300 million users (CNN, 2009).

There are different theories as to why social networking websites such as Facebook are so popular and widely used. One theory is that 'popular' people use the site to socialize and become more popular. Another theory is that 'unpopular' people use the site in order to gain popularity themselves (Zywica, 2008). In a research paper exploring the social successes of adolescents with their peers, popularity is defined as "the gold standard of social acceptance," and a popular person is seen to have "greater social skills and lower levels of depression" (Allen, 2005). Theories aside, it is clear that social networking sites such as Facebook have begun to play significant roles in the lives of teenagers around the world.

Some studies also link Facebook usage with the accumulation of social capital. Social capital can be loosely defined as resources gained through relationships with other people (Ellison, 2007). Clearly, social capital is highly sought after in the modern world. Examples of such range from lobbyists and other political figures forming relationships in order to get their ideas and proposals passed to socialite teenagers using sites such as Facebook to gain popularity. In the latter case, the social capital in question is the benefits gained from popularity, such as more friends, more social invitations, more relationship opportunities, etc. One way to gain social capital is by establishing relationships with new people through Facebook. In this sense, it could prove advantageous to accept "friend requests" from unfamiliar individuals.

When a person makes a Facebook page, he or she can opt to make it public or private. If the person chooses to make his or her profile public, then the profile can be seen by anyone; however, if that person elects to make it private, then the profile can only be viewed by his or her Facebook friends. These Facebook friends are obtained through friend requests. A person can send a friend request to another person, who can then choose to either accept or ignore it. If the receiver accepts the friend request, then both parties can view and interact with one another's Facebook profiles. Hence, the two parties are now friends. However, many teenagers do not even know all of their Facebook friends. The purpose of our research is to examine the various reasons why teenagers in grades nine through 11 accept friend requests from people they do not know.

Method

Participants

A random sample of 200 students at Northwest High School was generated by computer. Of the names generated, only the ninth, 10th, and 11th graders were contacted. These students were given slips during class that informed them that they had been selected to participate in a survey based on yearbook criteria- this actually alluded to the generation of their names using the yearbook's list of names. Students were instructed to report to the psychology classroom during lunch on any one of two days in order to fill out the questionnaire, and to enjoy free donuts, snacks, and refreshments as an incentive to participate fully in the questionnaire.

On the first day of the survey, forty-two students participated in the questionnaire. On the following day, eighteen students participated for a total of sixty participants. Northwest High School is located in a large, socio-economically diverse suburban area on the east coast. The heterogeneity of the races and ethnic backgrounds of the students who participated

in the questionnaire is microcosmic of Northwest High School's student body. The grade levels and genders of the participants were also reasonably distributed.

Procedure
The survey began by asking the subjects for biographical information, including age, grade level, sex, and racial/ethnic background. Then, subjects were asked to rate their conception of the importance of popularity in a high school setting on a scale from 1 (*entirely insignificant)* to 10 (*extremely important*), and then to rate how popular they personally believed they were, on a similar scale. After confirming their use of the social networking site Facebook, subjects were asked how many hours they actively spent on the site, whether for social networking or for Facebook's live chat feature.
The survey continued by asking subjects whether or not they had ever accepted a friend request from a person to whom they had never spoken with or someone whom they did not know. They were asked how often they would accept a friend request from an unknown person and to rate how much certain factors influenced their decision to accept the request, on a scale from 1 (*no influence*) to 10 (*complete influence*). Some factors included physical attractiveness, popularity, ethnicity, mutual ethnicity with the subject, and quantity of mutual friends with the subject (as displayed by Facebook). The next question utilized a set of statements and asked how accurate the respondent considered the statements. The statements concerned personal attributes of the respondent when deciding to accept a friend request from an unfamiliar individual, including the respondent's hope to possibly make a new friend, desire to have a higher quantity of Facebook Friends, or obligation to not ignore a friend request as to not seem mean or negative. These statements were rated on a scale from 1 (*completely inaccurate*) to 10 (*completely accurate*).

Hypotheses

There were a series of hypotheses explaining what factors could possibly influence teenagers to accept friend requests from unfamiliar individuals. Each hypothesis was placed into one of two categories, except for Hypothesis 3.
Category One involved factors that referenced the unfamiliar individual who sent the friend request: physical attractiveness, popularity, mutual friends, ethnicity and mutual ethnicity.
Hypothesis 1a: Physical attractiveness would be the most highly ranked motivation factor for those choosing to accept or ignore a friend request.
Hypothesis 1b: Popularity would be the second most highly ranked motivation factor for those choosing to accept or ignore a friend request.
Category Two involved factors that referenced the respondent: eagerness for new friends, eagerness for the appearance of more Facebook friends, and avoidance from seeming mean or negative.
Hypothesis 2: Facebook users would mostly likely wish to accept a friend request from an unfamiliar source in order to avoid seeming mean or negative.
Hypothesis 3 did not fall into a specific

category. Hypothesis 3: People who find popularity more important would be more likely to accept friend requests from unfamiliar individuals.

Results

Some survey questions did not elicit sixty responses, as a result of their conditionality. Some questions were omitted by some respondents as a result of non-response. Paradoxically, other questions were wrongfully answered, possibly due to negligence of the conditionality of some questions. The understood significance of such responses is interpreted as hypothetical answers to questions, as if the questions were in fact applicable to the respondent. Such responses were condemned. See Appendix for corresponding survey questions.

Question #	n	expected n	x	S_x
5	60	60	5.9	2.048
6	59	60	5.678	1.870
7	60	60	52 yes, 8 no	
8	50	52	5.66	5.576
9	53	52	24 yes, 29 no	
10	52	52	39 yes, 13 no	
*11	47	39	3.021	1.189
12	47	39	6 yes, 41 no	
13a	44	41	6.364	3.096
13b	44	41	5.455	2.510
13c	44	41	7.523	2.357
13d	45	41	3.956	2.876
13e	45	41	3.867	3.012
14a	46	47	6.109	2.693
14b	46	47	4.891	2.861
14c	46	47	5.239	2.853

n= number of responses for each question
expected n= number of responses expected for each question based on the conditionality of the questions previously asked
x= mean of the responses to the question
S_x= standard deviation of the responses to the question

*Q11 had choices Almost Never, Rarely, Sometimes, Often, and Very Often, which we translated into corresponding answers of 1,2,3,4, and 5, respectively.
The calculated coefficient of determination, R^2, shows that 3% of the variation in how often people accept friend requests is explained by the Least Squares Regression Line between their perceived importance of popularity and how often they accept friend requests. According to these data, there is very little correlation between the two variables.
Overall, 34% of the respondents said they accepted friend requests from unfamiliar people often or

very often, based on responses to Question 11.

Discussion

The results of this survey suggest that the primary reason from Category One for why people accept friend requests from unfamiliar individuals is the presence of mutual friends. The second highest factor from Category One was the physical attractiveness of the unfamiliar individual. The third highest factor was the popularity of the friending individual. However, this factor would only apply if the respondent knew enough about the individual to make such a judgment. This collection of data disproved our original hypothesis that physical attractiveness would be the most influential factor and that the popularity of the friending individual would be the second highest influence factor, from Category One. Few respondents felt that ethnicity or mutual ethnicity was an important deciding factor. Therefore it is difficult to draw any conclusions about the importance of ethnicity in deciding whether to accept or ignore friend requests from unfamiliar people.

Regarding Category Two, the results suggest that the most highly ranked motivation factor is the hope to get to know a new person and make a new friend. This implies that generally, people seek relationships with other people. This can also lead back to the theory on social capital in that people can obtain benefits from their associations with others (Ellison, 2007).

Perception of the importance of popularity showed little if any correlation with how often users accepted friend requests from unfamiliar people. This proves a null hypothesis.

Conclusion

Biases

Due to the fact that only students in Northwest High School were sampled, the results of this survey may not be representative of the entire population of teenagers in high school. With more time and money, our research would have included a larger sample size. A greater sample size would scope a broader range of geographical areas, especially because increasing numbers of users are joining Facebook across the globe. Some of the previously insignificant factors could also emerge as more influential factors.

Some respondents failed to cooperate with the directions given on the survey, therefore affecting the outcomes of the experiment. The survey was administered during lunch periods, which high school students value. This may have caused many respondents to feel rushed, despite the fact that we encouraged them to take their time. Ignorance of the survey directions may have resulted.

Another bias in the experiment may have resulted from the fact that certain respondents were in close proximity to other respondents, and were even conversing at times. Some respondents even went so far as to bring their friends, who were not selected to participate in the survey, to the testing area. We made sure, however, to only administer tests to those randomly chosen to participate in our study. For certain personal questions, such as those concerning perceptions of popularity, respondents may have felt inhibited from answering honestly, considering that a friend could have had a watchful eye.

Implications

The findings of our research could be applied to situations in other social domains. In very general terms, our survey looked for reasons why people may be inclined to associate themselves with others whom they do not know.

Based on the results of our research, it may be wiser for a company to use a system of references in order to boost sales, rather than to hire an attractive or popular personality to endorse its product. If a potential customer hears about good business from a trusted friend, he or she is more likely to respond to this referral than if he or she heard about the business from an advertisement that utilized an endorser alone. Though the internet era is very beneficial and revolutionary, there are obvious dangers that lurk on the internet, such as solicitations from sexual predators. Our results imply that teenagers are in fact aware of such dangers and they recognize the importance of associating with people whom their friends trust enough to befriend on Facebook. Our results also imply the willingness of some teenagers to meet new people, so it is imperative that social networking sites impose more security standards. Since teenagers may be naive and over trusting at times, it is important to prevent the creation of fake profiles by malevolent individuals.

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Appendix

The following questions deal with personal information, your opinion on popularity, and factors that influence your decision to accept or ignore a friend request on the social networking database known as Facebook.

Please read the following questions carefully. Then answer the following questions both thoughtfully and truthfully, to the best of your knowledge.

1. **Age:** 13 14 15 16 17

    (Circle one)

2. **Grade:** 9 10 11

3. **Sex:** Male Female

4. **With which group do you most identify your-self?**

    White African-American

    Asian-American/ Pacific Islander

    Hispanic/ Latino Native-American/ Other

5. **Overall, for any reason, how important is popularity to you during high school? Choose your response from a scale from 1 to 10, where 1 means you find popularity entirely insignificant and 10 means you find popularity extremely important.**

    Please keep in mind that we appreciate your true honesty on this survey. These answers are completely anonymous and cannot be traced back to the participant.

    1 2 3 4 5 6 7
    8 9 10

6. **How popular do you personally think you are? Choose your response from a scale from 1 to 10, where 1 means you think you are extremely unpopular and 10 means you think you are extremely popular.**

7. 1 2 3 4 5 6 7 8
    9 10

8. **Do you have an active Facebook account?**
    Yes No

    If No, do not answer any more questions after this one.

9. **Approximately how many hours do you ac-tively spend on Facebook each week, whether actively using the application for social net-working or for its chat feature? _____**

10. **Have you ever <u>sent</u> a friend request to a per-son to whom you have never spoken or with whom you have never been in a specific group, such as a club or team?**

Inside Psychology

The Kindness of Strangers:
Calling True Altruism into Question
David Garrison
Walt Whitman High School, MD

In the spring of 2009, an anonymous donor contributed $68 million to a select group of colleges across the country (Meyer, 2009). The donor clearly sought to help others (at the giver's own expense) without expecting anything in return. This is just one example of philanthropic behavior, something that occurs everyday in modern society. But while many people are quick to label these acts as "altruistic," some psychologists suggest that such an ideal motivation may not exist. Much of the controversy surrounding altruism actually stems from the definition itself.

Altruism is commonly defined as "unselfish concern for the welfare of others; selflessness" ("Altruism," 1992). But to some, selflessness implies that an altruistic act must be at a cost or sacrifice to the doer. At the very least, it should not bring pleasure to the doer. Under this zero-benefit definition, a good deed has yet to be conclusively proven as altruistic. Since humans possess free will, every act must be (at least indirectly) motivated by some personal gain or want. Even if the action primarily brings displeasure to the doer, that sacrifice could produce a sense of satisfaction or self-righteousness in that person, thereby contradicting the selflessness of the act ("An Example," 2006). (Even in the aforementioned example, the donor could have benefited from feelings of personal satisfaction, nobleness, or the alleviation of guilt.) This reasoning is echoed in the philosophy of Thomas Hobbes, who said that "No man giveth but with the intention of good to himself, because gift is voluntary; and of all voluntary acts the object to every man is his own pleasure" (Holmes, 1945).

But even if the motivation to help others is not distinct and unadulterated, it does not mean that such a drive does not naturally exist. Accordingly, the existence of empathy-altruism (as opposed to egoism or self-interest) is still widely debated among psychologists. Many turn to both evolutionary and behavioral studies in an attempt to isolate the motivational factors and answer the central question: Why do people help others?

Several psychologists view evolution as the key to understanding altruism. If selfless behavior does truly exist, it should be present outside of our modern social code, and it should be traceable through evolution and human development. Evolutionists point to parents' care for offspring as the first signs of altruistic behavior. Parental care is always at the giver's expense and sacrifice. An extreme example of this can be seen in the reproductive cycle of the female thread worm. The worm's eggs are hatched inside her; the young worms then kill their mother as they eat their way out of her body. Many claim this as proof that Mother Nature "has started altruism on a purely physiological level"

(Holmes, 1945). However, opponents might argue that parental care for offspring is motivated by a parent's egoist goal of preserving and spreading his or her *own* genes. In response to these attacks, evolutionists declare:

> We are not deriving altruism from egoism...for the reason that reproduction is an essentially altruistic function that is primarily concerned, not with the welfare of the individual, but with that of others that arise from it. We may regard it as the basic altruistic activity from which all the others are lineal descendants.
> (Holmes, 1945)

This basic instinct has developed over generations to involve more complex pro-social motivation in a variety of species. For instance, a recent study with capuchin monkeys showed that, "when given the choice of delivering an average or a special reward (an apple vs. a marshmallow) to a monkey in an adjacent cage, the monkeys more often chose to deliver the tasty marshmallows, for no apparent reason or reward" (Dingfelder, 2009). In another study, chimpanzees displayed an ability to "spontaneously assist" adults in retrieving apparently out-of-reach objects. Yet, in some instances, chimpanzees showed plain indifference to peers begging for food when they were in a position to provide it (Dingfelder, 2009). Clearly, the inconsistency of these studies has weakened their potential impact. Still, they show that some animals sharing common evolutionary ancestors with humans at least have the capacity to act for the benefit of others.

In an attempt to experimentally isolate altruistic motivation, some psychologists have taken a sociobehavioral approach. Among these are Batson and Shaw who tested the belief that behavior is only motivated by egoism. Batson and Shaw tried to experimentally differentiate altruistic motives from three different egoistic motives: empathy-specific punishment (shame, guilt), empathy-specific reward (approval, vicarious reinforcement), and aversive-arousal reduction (alleviation of the discomfort from observing someone in need) (Eisenberg, 1993). To test aversive-arousal reduction, Batson and Shaw used a 2 X 2 design (Escape X Empathy) in which the subject is led to feel empathic towards a confederate being electrically shocked and has either an easy or difficult opportunity to leave the experiment (Sorrentino, 1991). The subject is then given an opportunity to take the place of the victim. The results support the existence of an empathy-altruism motive because the empathic subjects chose to help regardless of the ease of escape (Sorrentino, 1991). Batson and Shaw relied on additional studies to dismiss the two other egoistic explanations: punishment and reward.

However, the work of Batson and Shaw has

still not satisfied critics. As Sorrentino (1991) notes, the experiments are all based on the logical fallacy that "we can infer a person's ultimate goal from his or her behavior." In reality, there could be other factors involved. First, for Batson and Shaw's aversive-arousal reduction proof, Sorrentino proposes that "correlates of empathic feelings" (such as justice, guilt, or sadness) could have influenced the decision to help. This theory is supported by the studies of Arps and associates (1987), who proved that when "sadness and empathic emotion were separated experimentally, helping was predicted by the levels of sadness subjects were experiencing but not by their empathy scores." Secondly, when a punishment for not helping is introduced, Sorrentino (1991) suggests that it could actually enhance the subject's self-reward, leading the subject to feel like a hero for resisting the justification to not help. Lastly, Sorrentino argues that Batson and Shaw's evaluation of reward did not sufficiently address vicarious reinforcement, the process by which the subject, too, experiences the victim's relief and pleasure after helping them.

Overall, critics agree that Batson and Shaw's research is a step in the right direction because it "challenges the notion that all behavior is egoistically motivated" (Eisenberg, 1993). But even if Batson and Shaw have ruled out the impossible (pure egoism), it does not necessarily prove the improbable (Sorrentino, 1991). They assert that there must be a motive to complement egoism, but the existence of that motive has yet to be sufficiently proven.

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Sweaty Palms, Math Problems, and Girls: Why Women Have a Higher Degree of Test Anxiety

Sarah Houston
Walt Whitman High School, MD

You slowly look down at the paper that has just been handed to you. Scanning the first problem, you realize you do not remember how to solve it. "It's alright, I'll just go onto the next one," you think. But question number two seems just as foreign as the first. Almost instantaneously, your heart starts to pound in your chest, your palms become sweaty, and you seem to forget everything you have learned in the past year.

Test anxiety happens to even the best and brightest high school students. But for some, this anxiety occurs almost on a daily basis. While stressing out about a test is one thing, some are almost paralyzed by their anxiety concerning testing.

There are two predominant components of test anxiety: cognitive and emotional (Morris, Davis, & Hutchings, 1981 [as cited in Cassady, 2001]). The cognitive component is when the student worries. These symptoms may include low self-esteem, catastrophic thoughts, and feelings of failure, worthlessness, and dread. Emotionality, or the "affective" component, consists of the physiological symptoms such as headaches, sweating, dizziness, and heart palpitations (Zbornik, 2001). These two types are usually present and interconnected in a student suffering from anxiety.

Many studies have found that the cognitive aspect directly affects testing ability in students (Bandalos, Yates, & Thorndike-Christ, 1995 [as cited in Cassady, 2001]), but the emotional does not (Williams, 1991 [as cited in Cassady, 2001]). Cassady states that, "The apparent relationship between emotionality and test performance is such that emotionality impacts test performance only under situations where the individual also maintains a high level of cognitive test anxiety." What usually happens is a student starts taking a test, thinks negative thoughts, then has the bodily reaction. A student who only has a physiological reaction will not necessarily get a worse test score.

So, why do certain people have a higher degree of anxiety than others? Some have found that low levels of self-efficacy are characteristically present in those with testing anxiety (Hembree, 1988 [as cited in Zeidner, 1998]),; Hunsley, 1985 [as cited in Zeidner, 1998]), meaning that people who think they are going to fail often set themselves up to do poorly on tests. The level of anxiety a person experiences also varies with each individual's specific response threshold for the fight or flight response to occur.

Gender and anxiety have been the focus of many psychologists, and they have found that gender does seem to affect the way a person deals with external stimuli. Women tend to be more uncomfortable and self-conscious in testing situations than men (Lewis & College, 1987 [as cited in Zeidner, 1998]) and tend to have lower perceived self-efficacy (Arch, 1987 [as cited in Zeidner, 1988]); Benson & Bandalos, 1989 [as cited in Zeidner, 1998]). When asked during testing situations about the level of social anxiety and public self-consciousness they felt, women reported much higher levels than men (Sowa & LaFleur, 1986 [as cited in Zeidner, 1998]). Overall it seems that women are more critical and less confident of their abilities during testing situations, and this negatively affects their performance.

The 2007 TestEdge National Demonstration Study conducted by researchers at the Institute of HeartMath, in collaboration with faculty and graduate students at Claremont Graduate University, found that twice as many females experienced high levels of testing anxiety compared with the males in the study (Institute of HeartMath, 2007).

In the area of mathematics, women also experienced higher anxiety than men and tended to experience math avoidance (Spielberger & Vagg, 1995). This relationship seems more straightforward considering men typically have stronger spatial skills, while women have stronger analytical skills.

There are many therapeutic methods that can help combat severe test anxiety. According to Ritter "The most widely discussed self-regulation techniques include progressive muscle relaxation, EMG biofeedback training, finger temperature biofeedback training, and autogenic training" (Lehrer, Carr, Sargunaraj, & Woolfolk, 1994 [as cited in Ritter, 1999]).

Psychologists also encourage students to take practice tests in which the testing situation mirrors an actual test. The more practice a student has the less likely he or she will think negative thoughts and experience physiological effects.

The bottom line is that most people who experience test anxiety do not fail tests because they are incapable, but because they do not believe they are capable. In addition to studying, confidence building is a key component of test preparation for all suffering from mild to severe test anxiety.

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Perfectionism as an Indicator and Symptom of OCD

Brooke Shafer
Walt Whitman High School, MD

In today's culture, Obsessive-Compulsive Disorder (OCD) and perfectionism are used as slang to refer to a person who is uptight or has particularly high standards. Recent research has shown that perfectionism often indicates the presence of OCD. However, these terms are not interchangeable. Perfectionism is as the setting of excessively high performance standards accompanied by overly critical self-evaluations (Wu and Cortesi, 2008) [as cited in Frost, Marten, Lahart, & Rosenblate, 1990]). This is the widely accepted definition of perfectionism in today's psychological world. Moretz and Mckay add that perfectionism also includes compulsive checking and "not just right" (NJR) obsessions, or the feeling that a task has not been completed adequately (2008).

Perfectionism has been linked to OCD frequently in recent research. Individuals with high OC tendencies are more likely to have high perfectionist tendencies than individuals with lower OC tendencies (Ashby and Bruner, 2005 [as cited in Rasmussen & Eisen, 1989]). Moretz and McKay report that perfectionism may be demonstrated by obsessive behaviors such as repeated checking and NJR feelings, as well as general anxiety and neuroticism (2008). Furthermore, perfectionism is a predictor for the OC symptoms ordering, obsessing, and hoarding (Wu and Cortesi, 2008 [as cited in Tolin, Brady, and Hannan, 2006]).

Perfectionism is not a predictor unique to OCD. While it is a predictor to OCD, it is also in fact a symptom for Obsessive-Compulsive Personality Disorder (OCPD) (Wu and Cortesi 2008 [as cited in American Psychiatric Association, 2000]). Additionally, it has been noted to be a predictor for various forms of pathology, such as eating disorders, worry, social phobia, anxiety sensitivity, personality disorders, and most notably, depression (Wu and Cortesi 2008 [as cited in Bardone-Cone 2007; Enns & Cox, 2005; Chang, 2007; Santanello & Gardner, 2007; Ashbaugh, 2007; Flett, Greene, & Hewitt, 2004; and Hewitt, Flett, and Turnbull, 1992]). When tested, no difference was found between perfectionism present in individuals with OCD and various Panic Disorders (Wu and Cortesi, 2008 [as cited in Frost and Steketee, 1997]). Moretz and McKay conducted a study at Fordham University, Rose Hill Campus that tested trait anxiety as a mediator between OCD and perfectionism. 188 undergraduate students were used for this study. Participants filled out three self-evaluations as the measure of the study. The Frost Multidimensional Perfectionism Scale (FMPS) had the subjects rate, on a scale of one (strongly agree) to five (strongly disagree), their tendencies towards Concern about making mistakes, Setting high personal standards, Perceived parental expectations, Parental criticism, Doubts about actions, and the Tendency to be organized (Moretz and McKay, 2009). The total score for each participant indicated the level of perfectionism, with higher scores indicating higher perfectionism. The State-Trait Anxiety Inventory (STAI) had participants rate on a scale of one (almost never) to four (almost always) their feelings of anxiety. The total score for each participant indicated the level of anxiety, with higher scores indicating higher anxiety (Moretz and McKay, 2008). The Vancouver Obsessional-Compulsive Inventory (VOCI) had participants rate how true each statement was of them regarding the following topics: Contamination, Checking, Obsessions, Hoarding, Just Right, and Indecisiveness (Moretz and McKay, 2009). The ratings were on a scale of zero to four; four described the subject very much.

The results of the study showed significant positive correlations with all the data. The only exception was the FMPS Perceived parental expectations subscale and the VOCI Checking or the STAI Trait anxiety (Moretz and McKay, 2009). Moretz and McKay (2009) were able to conclude from this study that anxiety is an important mediator between OCD and perfectionism.

When used casually, OCD and perfectionism both refer to the same character trait of uptightness. This does not give justice to their true natures, nor to the differences between them. OCD is a clinically diagnosable social disorder. Perfectionism is linked heavily to OCD and has been found to be its indicator and component.

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