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Dear Readers,

We are excited to present the Fall 2011 edition of the Walt Whitman Journal of Psychology. The journal is the only student run, high school journal of Psychology in the country. For each edition, we review the submissions from across the nation.

In this issue, we have covered a wide range of topics ranging from conformity, cell phone addiction, to self-esteem. In the interest of editorial integrity, we are also reprinting an article in this issue that was previously published with errors.

We would like to extend a special gratification to our graduating seniors, whose hard work and dedication to the Journal will be missed.

For more information about the journal, visit our website at www.whitmanpsych.com.

Best Regards,

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Call for Submissions

All research articles completed by high school students are welcome. Please be sure that articles are submitted in APA format with complete references. Full submission details are on page 4.

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The Whitman Journal of Psychology

Content

The Whitman Journal of Psychology is devoted to publishing the research and writing of high school 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.

Manuscript Preparation

Authors should prepare manuscripts according to guidelines established in the Publication Manual of the American Psychology Association (5th ed.). The Journal reserves the right to modify APA style. Manuscripts should be no longer than 15 pages. Manuscripts should include an abstract. Additionally, all manuscripts must include a list of references as well as parenthetical documentation in accordance with APA style. It is suggested that manuscripts include the following sections: introduction, methods, results and discussion. Manuscripts are not limited to these sections.

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Submissions should include a cover letter in which the author's name, school affiliation, advisor's name, address, phone number and e-mail address are given. Authors should keep a copy of their manuscript to guard against loss. Please e-mail a copy of your file in Microsoft Word along with a cover letter with the requirements listed above to whitmanpsych@gmail.com. You will get a confirmation e-mail once we have received your submission and are able to open the file(s).

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Experimental Psychology

Exploring the Mad Genius: The Relationship Between Creativity and Mood Disorder

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Introduction

The notion of the "mad genius" has been prevalent in western culture for hundreds of years. Early philosophers such as Socrates and Plato emphasized the idea of "divine madness". This concept intensified during the Romantic era in which the creative person was seen as distinct from the average person due to his or her identification with mental illness, (Becker, 2001). The list of poets, writers, and artists thought to have suffered from psychological disorders includes Robert Schumann, Virginia Woolf, Sylvia Plath, Ernest Hemingway, Vincent Van Gogh, Edgar Allen Poe, T. S. Eliot, Lewis Carroll, William Blake, and many others (Lauronen et al., 2004; Rothenberg, 1990). The question that has prompted research by psychologists is whether or not there is a relationship between creativity and mental disorder, and if one exists, what the relationship involves specifically.

Although links between creativity and other disorders such as alcoholism, schizophrenia and anxiety have been suggested and explored, affective disorders are the subject of a great deal of current research. Creativity has been associated with major depressive disorder, which causes a person to enter a melancholy state in which he or she feels worthless and no longer finds satisfaction in activities that had previously been sources of pleasure. The same association has been made with bipolar disorder, in which a person's mood fluctuates between feelings associated with depression and an overactive and buoyant state known as mania. The manic state, in a moderate form, is characterized by rapid thought processes, euphoria, and a feeling of invincibility. This condition can lead to increased productivity and insight (Jamison, 1995). True mania, however, can be highly dangerous as mental control disappears and the person seems to become out of control. These intense emotional conditions have been linked to creativity in writers and artists.

However, some question the link between mental illness and creativity. New studies have found that a heightened degree of mental illness does not necessarily correlate with higher scores on creativity tests in experimental populations. Many researchers today consider the supposed link to be a myth created and perpetuated by a culture that seeks to make its geniuses seem more accessible and human. Still, there are individuals with depression or bipolar disorder who went on to produce works or ideas widely acknowledged as highly creative. In the case of poets or writers, it is possible that the content of such works was influenced by the authors' experiences with mental illnesses. A causal relationship between creativity and depression or bipolar disorder is highly unlikely, though the

emotions triggered by these afflictions may be incorporated into a creative product.

Background

Studies on the topic of creativity and psychological disorder have not conclusively determined whether the two aspects are related or not. Many earlier studies, such as those by Jamison and Andreasen (1995), assert that a relationship does exist. Andreasen, as cited by Kohányi and Rothenberg (1990), conducted extensive interviews with thirty writers at the University of Iowa Writers' workshop, with controls matched for education, sex, and age. She found that 80 percent were afflicted at some point with an affective disorder, compared with 30 percent of controls, and that 43 percent had bipolar disorder, compared with 10 percent of controls. Andreasen also found a higher rate of mood disorder among the relatives of the writers than among the relatives of the controls (Kohányi, 2005; Rothenberg, 1990). Kohányi and Rothenberg also cited a study by Jamison in which autobiographies, biographies and medical records were used to diagnose 36 poets from Britain and Ireland with affective disorders. Her findings suggested a rate of bipolar disorder among poets of approximately 30 percent, much higher than the one percent average rate of the disorder (Kohányi, 2005; Rothenberg, 1990).

Several studies suggest that people engaged in professions requiring emotion and subjectivity are more prone to psychological disorder. According to Arnold Ludwig (1998), those whose temperament suits occupations in the arts are drawn to that field; this personality is also one that is more susceptible to mental illness. In his study, he found higher rates of mental disorders in more subjective and expressive professions compared to those that are less so. The prevalence of mental disorders was greater in the arts than in the sciences, and greater in the visual and literary arts than in the formal or performing arts. Depression was more common in poets than in authors of nonfiction or fiction writing, and artists with emotive styles had a higher rate of depression than those with symbolic or formal styles (Ludwig, 1998). Emotional instability seemed to correlate with professions in the arts, specifically those that focused on expression, such as poetry and emotive visual art. This research was extended by James Kaufman (2005), who studied the rate of mental illness in Eastern European poets. He used biographical information on poets, playwrights, fiction writers and nonfiction writers from the *Reader's Encyclopedia of Eastern European Literature* to determine the comparative rates of mental disorder. The only statistically significant difference was that poets were more likely to have an illness than fiction or nonfiction writers. These findings also demonstrated that the correlation between creativity and psychological disorder was not a direct result of the Western European or American culture, as it was replicated in another culture (Kaufman, 2005).

One explanation for why bipolar disorder may account for increased creativity is that the minds

of individuals who have the disorder may undergo *manic dedifferentiation*, in which they use Janusian processes during periods of mania. This cognitive set involves the simultaneous consideration of opposite ideas. This type of thinking often yields new and creative ideas, and it is argued that people with bipolar disorder are able to think in this way because they retain their sanity and connection to real life to a certain extent, even during mania, unlike people with schizophrenia. By causing more flexibility regarding contradictory thoughts that lead to creative theories and comparisons, bipolar disorder may contribute to creativity (Anderegg & Gartner, 2001).

There is also considerable research suggesting that hypomania, a milder form of mania, may increase creativity, while its more intense form does not. Author Kay Jamison's recollections of her experiences with bipolar disorder reveal that she was largely unable to function during manic episodes, but when she was younger and her symptoms were not as severe, she felt elated, never tired, and optimistic (Jamison, 1995). This condition, as compared with the out of control state of mania, would be more conducive to creativity.

There is also some support for this assertion in experimental studies. In one such study, the creativity of a group of 77 subjects comprised of 17 individuals with bipolar disorder, 16 individuals with cyclothymia (a less severe form of bipolar disorder characterized by alternating hypomania and mild depression), 11 non-afflicted relatives of the first group, and 15 controls was assessed using Lifetime Creativity Scales. Results showed that the non-afflicted relatives of individuals with bipolar disorder and the people with cyclothymia had the highest levels of creativity (Richards, Kinney, Lunde, Benet, & Merzel, 1988). This suggests that people who have milder symptoms of bipolar disorder and possibly experience hypomania might also have higher levels of creativity.

Another study used the Adjective Checklist Creative Personality Scale (ACL-CPS) and the Revised General Behavior Inventory (GBI) to assess the creative and bipolar tendencies of 72 students. Based on GBI scores, participants were categorized as hyperthymic (hypomania but no depression), cyclothymic, dysthymic (depressed), or euthymic (neutral mood patterns). The only significant difference for results of the ACL-CPS was that the group with hyperthymic mood patterns scored higher than any of the other three groups. Six items on the GBI were the best predictors of creativity, five of which fell under the hyperthymic category, while one fell under the cyclothymic category. They were all characteristic of creative activity, but were not sufficient for a diagnosis of bipolar disorder (Shapiro & Weisberg, 1999). The authors suggest the possibility that creativity scores reflect an overall positive emotional state, not necessarily a mood disorder, and that positive emotion may be an effect of creative periods rather than a cause. There is support for the relationship between creativity and emotions characterized by positive tone, moderate

levels of activation, and promotion motivation in a meta-analysis of research on mood and creativity (Baas, De Dreu, & Nijstad, 2008). A study by Silvia & Kimbrel (2010) also supports the finding that depression and dysthymic mood patterns do not predict creativity. Aspects of depression did not explain variance in creative accomplishments, creative cognition, everyday creative behaviors or self-beliefs about creativity.

A study comparing levels of illness in people with bipolar disorder had similar findings. Using the Symptom Checklist-90-Revised and clinical diagnosis, 20 people with bipolar disorder and 24 with other psychological disorders were classified as severely ill (seven), moderately ill (ten), mildly ill (eighteen), or recovering (nine). Patients were also tested for creativity, and the group with bipolar disorder did not score significantly higher than the group with other diagnoses. Patients categorized as severely ill, however, scored lower than other groups. Patients who were moderately ill scored higher than any of the other groups (Ghadirian, Gregoire, & Kosmidis, 2000-2001). Thus, while the severe form of mania may not be conducive to creative activity, a milder form might be.

Not all studies have found a positive correlation between creativity and bipolar disorder or even just hypomania. In an analysis of the creativity during the career of composer Robert Schumann, who is thought to have had bipolar disorder, Robert Weisberg (1994) found that periods of hypomania corresponded with greater quantities of work, but not necessarily greater quality. He composed approximately four times as many pieces during hypomania than during depression, but based on the Schwann and Penguin Guides, the work produced during hypomanic periods was not more creative. This suggests that Schumann's more positive mood motivated him to work and, as consistent with symptoms of mania and hypomania, he was more active during these periods of his life.

Researchers have also considered the possibility of an indirect connection between creativity and psychological disorder. One potential link, personality, was examined in relation to creative achievement and mental disorder. In their study, Chávez-Eakle, del Carmen Lara, & Cruz-Fuentes (2006) evaluated three groups of 30 people for creativity using the Torrance Tests of Creative Thinking (TTCT), for personality using the Temperament and Character Inventory (TCI), and for symptoms of psychological disorder using the Symptom Check List-90 (SCL-90). The first group was chosen for creative achievement, the second was a control and the third was composed of psychiatric outpatients. The character traits that correlated positively with creativity, including novelty seeking, persistence, self-directedness and cooperativeness, did not correlate positively with psychological disorder. There was a high negative correlation between creativity and mental disorder, demonstrating that common personality traits do not link the two characteristics.

Another suggested third factor connecting creativity and psychological disorder is rumination. The introspective and emotive nature of poetry has been cited as a possible reason for its correlation with mental illness, as those who are prone to depression or other disorders may be drawn to poetry because of their contemplative nature; the magnification of emotion by the process of writing poetry may in turn increase the likelihood of illness (Kaufman & Baer, 2002). One study on this theory tested 99 students for depression using the Center for Epidemiological Studies Depression Scale (CES-D). In order to test creativity, they used the Abbreviated Torrance Test for Adults, a questionnaire that assesses creative interests. They also used part of the Purdue Creativity Test (PCT); and for self-reflective thinking used the Ruminative Responses Scale (RRS). Both creativity and depressive symptoms were found to correlate with self-reflective rumination, though they were not found to link to each other without this intermediary (Verhaeghen, Joormann, & Khan, 2005). This suggests an indirect relationship between creativity and depression, and that the self-reflection caused by depression may contribute to the content of creative work.

Some researchers claim that there is no connection between creativity and psychological disorder. Albert Rothenberg (1990), for example, asserts that creativity is fostered by a healthy mindset, not one plagued by illness. In his studies of individuals with creative achievements, he has not found any universal traits other than high levels of motivation, although many of these people tend to be slightly introverted. Two mental processes that he contends are central to creativity, the Janusian process and the homospatial process, may seem outwardly similar to the cognition associated with mental illness because of the focus on the simultaneous existence of opposite ideas that at times transcend logic. But they are healthy and purposeful, unlike illogical thoughts in patients with psychological disorders. The strain that these types of thoughts put on the mind, Rothenberg argues, would make it incredibly difficult for a person with an already unstable mind to employ them in creative endeavors. His studies of eminent creative individuals who dealt with mental disorders show that periods of creative activity generally did not occur when the person was most affected by his or her illness.

Analysis

Clearly, investigation of the link between creativity and bipolar disorder and other mental illnesses is incomplete. While correlational studies have found a connection between these two attributes, experiments have not yet yielded a completely sound explanation of the nature of this relationship.

The methods used in some of the early studies on the topic have been questioned, hence detracting from the legitimacy of their findings. For example, the pool from which Andreasen chose her subjects, the Iowa Writer's Workshop, is known as

a place where many distinguished writers go when experiencing difficulties in their work, increasing the chance that her subjects were suffering from a psychological disorder thus skewing the results of her study (Schlesinger, 2009; Rothenberg, 1990). Her study also had a major problem: there were too few participants for her findings to be generalized. Jamison's study had the same issue. One of her generalizations was based on her percentage that 12.5 percent of visual artists had or once had an affective disorder was based on a single person. (Rothenberg, 1990). This small sample size makes it impossible to draw valid conclusions from her data. Flawed methods and interpretations may account for some of the inconsistencies between the studies of Jamison and Andreasen and subsequent experiments. Later experiments had more participants and used more objective measures of creativity as well as accurate symptoms of psychological disorder, such as verified tests and questionnaires, instead of simply choosing people involved in the arts and interviewing them to determine whether they had been diagnosed or treated for a psychological illness. The superior methods of these experiments, though not perfect, help to discredit the more dubious results of earlier correlational studies.

Many studies that show evidence for a connection between creativity and mental illness, such as those from Ludwig (1998) and Kaufman (2005), examine the lives of eminent writers, poets, and artists mainly through biographies and, when possible, medical records. The problem with this method of research is that the people who are studied cannot be given tests evaluating their level of creativity or psychological disorder, as many of them are not even alive. Therefore, records of their emotional patterns that may lead a researcher to believe that the individual suffered from bipolar disorder may be flawed or exaggerated by the biographer. Cultural beliefs concerning the "mad genius" may lead a biographer to look for such a condition in a subject where there is none. The oscillating moods may also just be the natural ups and downs that accompany the successes and failures of a creator (Rothenberg, 1990). The pressure experienced by renowned individuals may also make them mentally unstable, while not necessarily leading to an illness that can be diagnosed.

The conclusions drawn by articles on this topic seem to depend on the type of study conducted. Correlational studies, such as those of Jamison and Andreasen as cited by Rothenberg (1990), Kohányi (2005), and Ludwig (1998), tend to support a relationship between creativity and psychological disorder, as does speculative reasoning, studied by Kohányi (2005), Kaufman and Baer (2002). Meanwhile, experiments fail to find a causal relationship between creativity and affective disorder (Chávez-Eakle et al., 2006; Silvia & Kimbrel, 2010), and although some began with the intention of finding such a relationship, many ended up finding a connection between creativity

and mild or moderate hypomania (because of the nature of their experimental procedure) (Richards et al., 1988; Shapiro and Weisberg, 1999; Ghadirian et al., 2000-2001). Since different methods may have produced different results, the inconsistencies from the research may be reconcilable.

There is also a controversy as to whether the mental processes associated with creativity require a healthy mindset or whether they can be carried out during the manic phase of bipolar disorder. Anderegg and Gartner (2001) argue that the dedifferentiation and seemingly Janusian processes that occur during mania indicate creativity, but Rothenberg (1990) insists that this is not the case. While he does say that people experiencing mania think in illogical ways that resemble the Janusian process, he claims that they are not able to use these thoughts to generate metaphors, theories, or anything else that can contribute to creative production. While mania can induce the creation of novel thoughts, these thoughts are not put to use and are therefore deemed invaluable. As value is a necessary component of creativity (Myers, 2004), the thoughts that form during mania cannot be considered creative. Based on Jamison's (1995) accounts of bipolar disorder and her experiences of the manic state, it would be nearly impossible for a person in that condition to concentrate enough to transform irrational thoughts into coherent, creative works. Contrary to the claims of Anderegg and Gartner, Jamison contends that a person experiencing true mania is not grounded in reality enough to derive any creative production from the many illogical thoughts that occur to him or her. While hypomania may help in the creative process by increasing processing speed and elevating the person's mood, mania would not. The thought processes that occur during creative activity are generally healthy ones, and thus would not be directly associated with an "unhealthy" state such as mania.

Discussion

While there is not a causal relationship between creativity and psychological disorders, specifically that of bipolar disorder, the experience of this illness may enhance creativity if the latter is already present in the afflicted individual. Experimental studies have shown that symptoms of disorders do not predict increased scores on various creativity tests, but according to correlational studies there is some sort of relationship, though it is most likely indirect. The idea of the "mad genius" would not have lasted so long if it were not based in any fact, and observation of creative geniuses has shown that there are many prominent individuals who do suffer from mental illnesses. Studies have narrowed down the phase in the bipolar cycle in which creativity is most likely to be enhanced; hypomania is the only condition in which subjects have shown greater creativity, and a meta-analysis of samples not associated with disorders show that creativity is correlated with positive, active, and intrinsically motivated emotions (Baas, De Dreu, & Nijstad, 2008). Thus, it makes sense that hypomania, an overactive

state characterized by extreme optimism and positive affect, would be conducive to creative production. The strong emotions and powerful experiences felt and recollected by people who have bipolar disorder (Jamison, 1995) may be incorporated into the writing and artwork of those who already had creative tendencies, and this emotional content may increase the quality of their work. Bursts of creativity would be more likely to occur when people have greater mental health, but they could still use ideas gained from introspection during periods of depression or mania in their writing or art. As Romantic poet William Wordsworth remarked, "All good poetry is the spontaneous overflow of powerful feelings recollected in tranquility." Creative individuals might use the "powerful feelings" they experienced as a result of their mental illness to write poetry or engage in other artistic activities when their emotions are less intense and their minds are in a healthier place.

Potential complications concerning data on the connection between creativity and psychological disorder is the subjectivity of the variables. It is difficult to evaluate levels of these factors objectively and in a way that can be assessed statistically when both, especially creativity, can be open to interpretation. Also, not much true experimentation is possible because bipolar disorder and depression cannot be inflicted on subjects, so a causal relationship cannot be proven or disproven using conventional experimental methods. Researchers must make do with studying the levels in which these factors exist in subjects and make inferences from that data. They are both closely connected to an individual's personality, so it is nearly impossible to assess how a person's creativity would be affected if he or she did or did not have a disorder (Chávez-Eakle et al., 2006).

With the amount of information presently available, many of the conclusions drawn concerning this issue are forced to be at least partly speculative. These hypotheses must be tested to discover the true nature of the connection between psychological disorder and creativity. Modern-day "creative geniuses" must be used to test for disorders instead of relying on biographies to determine the real correlation between the two conditions. Researchers should test levels of creativity in the same individuals at different stages of the bipolar cycle to find out whether creativity is really highest at hypomania and healthy periods, and whether the creativity of people with bipolar disorder experiencing hypomania should be compared with people experiencing extremely positive moods but do not have any psychological disorder. Only when all the hypotheses are tested and the findings are replicated will researchers be capable of determining whether or not the term "mad genius" is an appropriate title.

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Conformity in a Modern American High School

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Abstract

The results of a student-run replication of Asch's study on conformity are presented. Factors were age, gender, levels of introversion/extraversion, partner/ no partner, and group size. Asch's results revealed that 75% of participants conform at least once to the group's incorrect responses (Asch, 1955). Experimental results showed a 67.65% rate of conformity. In Asch's study, participants conformed 35.10% of the time with four confederates and 35.20% of the time with six (Asch, 1955). The experiment yielded 21.45% and 8.57% of the time respectively. Underclassmen (20.89%) conformed more than upperclassmen (17.05%) but less (22.64%) when the group sizes were the same. Males conformed (21%) more than females (18.5%), extraverts (6.32%) more than introverts (0%), a participant without a partner more (20.42%) than a participant with a partner (0%), and participants tested with four confederates (22.64%) more than with six confederates (8.57%).

Keywords: upperclassmen (eleventh and twelfth graders), underclassmen (ninth and tenth graders).

Conformity in a Modern American High School

Solomon E. Asch of Swarthmore College conducted an experiment in the 1950's on the effect of group pressure on conformity. However, the experiment was blind; participants in his study did not have knowledge of the true purpose of the experiment before they began. Only after the experiment was completed did Asch reveal that it was not a test of "visual judgment," but of how the influence of social pressure affects opinions (Asch, 1955). In the original experiment, as referenced in Opinions and Social Pressure, college students participating in the experiment entered a room of similarly aged students and were asked which of three lines matched the height of a standard line of comparison. Seated strategically in the middle of the group, they listened as the others gave consistently incorrect answers for most of the trials. The purpose was to see if the participants would conform to the opinions of the confederates who were responding incorrectly on purpose despite what they saw (Asch, 1955). The same question was asked in this experiment, but the factors affecting conformity were group size (which Asch also tested), upperclassmen vs. underclassmen, introversion vs. extraversion, and gender. This experiment, which replicates Asch's study, was conducted at a suburban high school in Pennsylvania.

Method

The parameters were based on Asch's study and APA ethical guidelines. The student tried to stay as faithful to the original experiment as possible. Working with an advisor, the student received permission from the school principal to conduct the

study.

Preparation and Set-up

The effort cards that were used to conduct the experiment were modeled after the card that Asch used. There were 18 sets of cards with two cards each. One card contained the standard line of comparison and the other contained the three comparison lines clearly labeled A, B, and C. The size of the cards was equal, the standard line of comparison was set in the middle of the card, and lines A, B, and C were spaced 3 inches apart from each other on the second card. All lines began the same distance from the bottom of the card. The lines that did not match the standard were between three fourths of an inch to one and three fourths of an inch different than the standard (Asch, 1955). There was only one correct answer and the order of the answers contained no pattern. Asch tested his cards on a group without any group pressure and the group answered incorrectly less than one percent of the time (Asch, 1955). To make sure that the cards used in the experiment were adequately easy to answer correctly, the experimenter had classes write down their individual answers on paper and hand them in. The incorrect responses occurred 0.9259% of the time.

Participants

From a list of all the students in the school, over 175 students were randomly selected to participate in the experiment by simply putting a check mark beside student ID numbers. Each of these students was given a packet to complete and return if they wished to participate in the experiment. The packet contained false information regarding the purpose of the experiment. The packet was presented as a test of visual perception. It also asked questions about the participant's age, grade, and gender and contained an introversion/extraversion test taken from the book Personality Test written by Lenore Thomson. Examples of questions that were used are "Do you prefer a social life that includes: A) many friends and acquaintances? or B) a few that you feel close to?" where A revealed an extraverted personality and B an introverted one (Thomson, 1998, p. 14). There were fourteen questions total.

Participants were tested with others in their age group. There were 34 total participants. There were 17 males, 16 females and one unknown, and there was one person whose gender was not recorded. The number of upperclassmen tested was 15, and the number of underclassmen tested was 19. Of the upperclassmen, six were tested with six confederates and nine were tested with four confederates. All the underclassmen were tested with four confederates present. For the introversion/extraversion part of the experiments, introverts totaled six, extraverts eight, and unknown personality types 19. All 32 participants were in a room full of confederates except two had a partner that answered correctly with them.

Confederates

Upperclassmen confederates consisted of students currently enrolled in Advanced Placement Psychology who had knowledge of the experiment. Underclassmen confederates were younger siblings of the experimenter's friends. They were informed about the purpose of the experiment and its

background in the form that they received and were given a brief introduction by the experimenter prior to experimentation. All the confederates agreed to give up their homeroom time to participate and also received a form to complete and return before experimentation began.

Ethics

APA provides guidelines for ethical experimentation. The code of ethics requires that 1) experimenters must obtain informed consent, 2) they must protect participants from physical and mental harm, 3) they must maintain the confidentiality of all participants, and 4) they must debrief participants after the experiment (Myers, 2007). Because some participants were under legal age and therefore unable to provide consent, it was necessary to obtain their parent/guardian's consent and the under-age participant's assent ("Ethical Issues," 2005). In the packets that the randomly selected students were given, it was explained that there was no danger involved in the experiment, but if they felt threatened at any time during the experiment, they could leave. All participants were referred to by ID numbers rather than their names, and the confederates had to agree that they would not talk about the experiment or the participants. Debriefing procedure occurred after the experiment was over and will be discussed later.

During the Experiment

The experiment began when the participant was called to the classroom after all the confederates had arrived. They were led to assume that they were the last to be called into the room. Everyone was then led to another room where testing would occur and were told they would be randomly seated. The participant was always seated in the exact middle of the group and the group consisted of an equal number of male and female confederates on the majority of occasions. Before trials were started, the experiment was explained briefly. If no one had questions and understood that they could leave at any time, the experiment began. Confederates were told to repeat what the first trained confederate said. The first and second trials were always answered correctly in Asch's experiment and so the same procedure was used in the student-run experiment (Asch, 1955). Confederates also answered correctly numbers six, nine, thirteen, and seventeen in the student's experiment. Six trials of the 18 were correctly answered and 12 out of 18 were answered incorrectly, all unanimously. The lead confederate was told to pick the next best answer when answering incorrectly.

Each person in the room gave their answer out loud going down the line. The answers were all recorded in a table as answering occurred. The experimenter was seated in the middle of the table and there was about two tables width separating the participant from the cards. The cards were turned towards each person as they answered to give the appearance that everyone was looking from an optimal viewing angle, directly in front of them. The participants often appeared to be concentrating very hard on the lines and glanced around in discomfort before and after they answered. Sometimes they would laugh nervously or would whisper to the person beside them in confusion. One female subject was even shaking slightly as she answered.

After all the trials were complete, the experimenter thanked everyone for their participation and informed the group that debriefing would occur. Again, the experimenter said random selection would determine the order of debriefing as it had the order of seating and the confederates left the room as the participant was selected to go first.

Debriefing

The debriefing procedure was modeled after a sample procedure researched. Once the experimenter and participant were alone, the first question the experimenter asked was "How did it go?" Most said that it went "okay." Then, participants were asked if they had any questions about the experiment. Most had no questions, but when they did, the experimenter answered their questions. Most questions were requests for clarification on what they were supposed to do. "We were matching the lines with the ones that were the same, right?" Following this the experimenter would often note that, "I noticed you answered differently than everyone else a couple of times. Do you have any idea why that might be?" Several excuses were given and the participants seemed a bit disconcerted or embarrassed that they had disagreed. Some thought that the others, because of the angles from which they were seeing, were wrong. Others worried that maybe they needed glasses or were crazy. One person said they had just gotten their prescription changed, another that they thought they had 20/20 vision and a third kept exclaiming throughout the entire experiment that she "must be crazy". Additionally, a few of the participants thought that the others in the group were just saying what the first person was saying just to fit in.

The participants were then told that they had been deceived, that the actual purpose of the experiment had been group pressure and not visual perception. The experimenter apologized for the deception and explained that it was necessary in order to obtain unbiased results. No one was upset by the revelation or accepted the offer of removing their results from the study. Several participants thought it was quite clever and said that it reminded them of the TV show Punk'd hosted by Ashton Kutcher. Next, participants were told how many times they conformed to the group's incorrect responses. When asked if they recalled doing this, some participants admitted that they had purposefully gone along with the group even though they knew the answer was wrong. Others did not recall answering incorrectly and just thought that the answer they were giving was correct. Finally, if there were no more questions after the revelation, the participants were implored to not tell anyone the true nature of the experiment so that testing could continue ("Ethical Issues," 2005).

Results of the Experiment

The effect of the number of confederates on conformity was opposite of what Asch showed. The group size that produced the most conformity had six confederates (Asch, 1955). In the student-run experiment, a group with six confederates conformed to the incorrect response of the group 8.57% of the time whereas conformity occurred 22.64% of the time with four confederates. Those tested were all

upperclassmen. Conformity occurred more often to the smaller rather than the larger group (see Figure 1).

Underclassmen conformed less than upperclassmen when the percentages of the groups with four confederates were compared, but when compared with the total percent of conformity for upperclassmen i.e. the percent with a group of four confederates and the percent with six confederates combined, upperclassmen conformed less (see Figure 2).

In comparing the percents of conformity between male and female participants, the data showed that male participants conformed more often than female participants. One person's gender was not recorded and therefore is not included in the data (see Figure 3).

Additionally, there was no data collected on the personalities of most participants and thus those participants are not included in the calculations of the following percents. Introverts conformed 0% of the time, extraverts conformed 6.32% of the time, and the one person that scored a tie on the introversion/extraversion test conformed 50% of the time (see Figure 4).

Figure 5 displays data that should not have occurred. Two participants, instead of being surrounded by all confederates, had a partner in the form of a confederate that did not understand that they were supposed to respond incorrectly. Those two participants conformed 0% of the time whereas the other participants conformed 20.42% of the time.

Figures 6 and 7 both show the amount of conformity in number of trials incorrectly answered versus the frequency of this occurring. The graphs are skewed to the right. Figure 7 displays a moderately strong negative correlation meaning that as the number of questions that were incorrectly answered increased, the frequency decreased.

Calculation of Results

When calculating the percentage of times that a participant conformed, the experimenter took the number of incorrect answers given by the participant when the confederates were also wrong (as opposed to a participant going against the group when the group was correct) divided by the number of incorrect answers given by the group of confederates. Because confederates were instructed to only get six specific answers correct out of eighteen trials, if a participant answered incorrectly six times, they were said to have conformed 50% of the time (6/12 =0.50). However, in some instances, the lead confederate made a mistake and answered a trial correctly that they were not supposed to. In this case, the experimenter divided by eleven instead of twelve.

Another calculation that was made is that of the standard value to which the results were compared. The standard value for the total experiment was determined to be 35.12%. This was found by taking the percentage of participants who were tested with a group of six confederates multiplied by the percentage of conformity that Asch received with six confederates. This number was then added to the product of the percentage of participants that were tested with four confederates and the percentage of participants that Asch received with four confederates.

Analysis

Underclassmen conformed less than upperclassmen in the case of four confederates. Underclassmen may conform less to a group because they do not know each other as well; upperclassmen have known peers in their age group for longer and have a better idea of each other's truthfulness and intelligence, which may have led to increased conformity.

On the other hand, when upperclassmen's conformity is looked at they conformed less than underclassmen. Perhaps this can be explained by the insecurities of underclassmen, becase they do not know each other as well as the upperclassman do and therefore try harder to impress. Also, upperclassmen may be more comfortable going against the group because their friendships with the confederates are more stable by their junior and senior year. Additionally, high school may have taught upperclassmen to think for themselves. Upperclassmen probably have more experience dealing with peer pressure and other tests that come with age.

Participants conformed more with four confederates than with six confederates likely because with six confederates, the group was too large for conformity to increase. Participants thought that it was very unlikely for all six confederates to answer unanimously and incorrectly.

While females are often thought of as being more social beings than the males, male participants gave in to group pressure more often. This occurrence may be attributed to a desire by the male participants to appear intelligent in the eyes of the female confederates and female experimenter.

Personality affects the way problems are approached, friendships are made, and the world is viewed. Introverts were found to conform less than extraverts. In Personality Type, the author states that extraverts "act before reflecting" and "are influenced by and gauge their worth by the expectations and attention of others," so the fact that extraverts conformed more than introverts is logical (Thomson, 1998). Furthermore, the one participant that scored equally as an introvert and extravert may have conformed more than both introverts and extraverts because "close or even scores in a category tend to suggest that the person hasn't developed a clear-cut sense of self" (Thomson, 1998, p. 25).

Results were easiest to explain when participants conformed less when they had a partner present than when they were alone facing the group. When another person that agreed on the correct answer was present, participants were not singled out as the lone person to be answering incorrectly. The situation changed from one of an "I" to a "we," causing different responses. Instead of an in-group of one, there was an in-group of two. It was safer and easier to give an opinion when there was someone that thought the same way.

Comparison of Results to Standard

Table 1 shows the standard results (the results that the experiment should have gotten), the experimental results, and the percent errors. Asch's study revealed that 75% of participants will conform to the group at least once (Asch, 1955). The student-run

experiment attained a result of 67.65% of participants conforming at least once. Percent error was 9.80%.

For a group with four confederates, the standard value was conformity 35.10% of the time. In comparison, the high school experiment showed that participants conformed 21.45% of the time in a group of the same number of confederates, a percent error of 38.89%. Recall that n=28.

For a group with six confederates, the standard value was conformity 35.20% of the time. In comparison, the high school experiment showed that participants conformed 8.57% of the time in a group with the same number of confederates, a percent error of 75.65% (n= 6).

Through calculation, the standard for the percent of time total conformed was determined to be 35.12%. The student-run experiment arrived at a value of conformity 19.20% of the time, which is a percent error of 45.32% (n=34).

Overall, the number of participants that conformed and the amount that they conformed was much less in the experiment than a look at Asch's results from the 1950s would have predicted.

Reasons for Error

There are several reasons for the discrepancies between the standard values and those obtained by the experimenter:

The lines chosen for the confederates to answer incorrectly were chosen without any consideration for how obvious they were to match. This may not even be an error because the difference between the comparison lines and the standard for each trial were all basically the same, within ¾ of an inch to 1¾ inches. Asch showed that even when the difference between the lines was seven inches, conformity still occurred (Asch, 1955).

At one point, with a lack of participants to test, two confederates found one participant who thought it suspicious that the two confederates were also part of the group that was, to their knowledge, being tested.

The fact that the leading confederate was not very convincing could also account for some of the result errors. When testing began with the underclassmen, the leading confederate was not able to differentiate between the lengths of the lines. She had not worn her glasses for over a year because she said her vision was fine; but when asked which of the three lines matched the standard, she not only answered incorrectly on the first trial, but also hesitated for several seconds and appeared unsure on all the other trials.

Since there were only around 400 to 500 students per class, the population that the experimenter was pulling from was too small. Most, if not all the participants knew at least one of the confederates, whereas in the Asch experiment, the participants were pulled from three colleges in the area not including Swarthmore (Asch, 1955). When the experimenter asked for suggestions from the participants, it was often suggested that the group size (six confederates) was too large to be believable. Despite the fact that over 175 forms were given to randomly selected students, only n=15 who handed in the forms were tested. This means that the attempt at random selection failed. Those that handed their forms in may have been more intelligent, sociable,

responsible, etc. The remaining n=19 participants had to be selected from homerooms during the testing time. Most of these participants were volunteers, which meant that they could have been more outgoing or confident.

The fact that this was a student-run experiment as opposed to an experiment conducted by a respected adult or an accredited university may have detracted from the results attained. For example, according to Psychology: Eighth Edition in Modules, when Stanley Milgram conducted his experiments at Yale University his obedience results were higher than when he was at a lesser known university (Myers, 2007).

Another reason that the results of the experiment were not very close to the standard was that the experimental results were actually valid. In the 21st century, America may be a more individualistic country than it was over sixty years ago in the 1950s. Participants since Asch's time may be less likely to conform.

Discussion

To conclude, the results of the student-run experiment in one modern American high school indicate that Asch's results are applicable on a local, more personal level. Though the results did not match exactly those of Solomon Asch, and in some cases contradicted his results, they are still thought provoking. With a sample size more than one-third less than that of an ideal experiment and some confounding variables, the results are hardly foolproof; the worth of the experiment comes not in the actual data, but in the lessons about testing that were learned.

Conducting an experiment as a high school student takes days of preparation. Researching information on the topic in question, writing papers about methods and ethics, as well as presenting the idea to an advisor and the principal for consideration all had to be completed before experimentation can begin. Permission slips, hall-passes, testing schedules, and props for the experiment must be considered and confederates must be sought and trained. Reminders that will for the most part be ignored will have to be sent out because only about 10% of the student population will return their packets by the due date.

Finally, with those points in order, experimentation can begin. While setting up this experiment, the experimenter had to handle confused confederates and necessary changes to the experiment, like the change in the number of confederates. Only a limited number of trials could be run because of space and time constraints due to school activities, standardized test remediation, and clubs. But with perseverance, passion, and planning, achievement is possible.

Students in the school had a chance to participate in something unique, while challenging their beliefs about what peer pressure means. Peer pressure was transformed from mothers questioning, "If all your friends jumped off a bridge would you?" to something more subtle and pervasive, something that truly influences seemingly monotonous actions in everyday activities. Conformity is not always negative, and it was not the point of the experiment

to prove that students give in to the influence of the group too often. The point was to make people think about what they really see and think, what they believe in and why, how others have an effect on them and how they can have an effect on others.

In a modern American high school, conformity was present as it probably is in any setting. It is not something made up for psychology textbooks. It is a fact of life and one that cannot and should not be changed. To acknowledge its presence was the important point. Will future studies show that American high schoolers conform, that an introverted personality means less conformity, or that four confederates are better than six? Only future research can answer these questions.

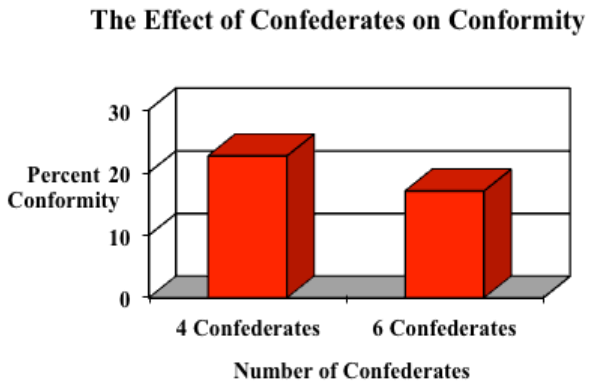

Figure 1. The Effect of Confederates on Conformity. This data only includes upperclassmen.

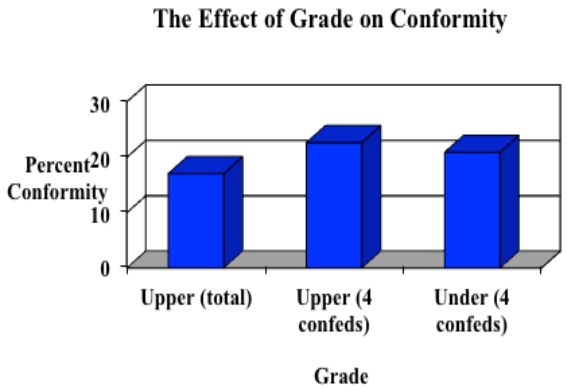

Figure 2. The Effect of Grade on Conformity. The upper total is the percent of conformity for upperclassmen with four and six confederates combined. The other two bars are just with four confederates.

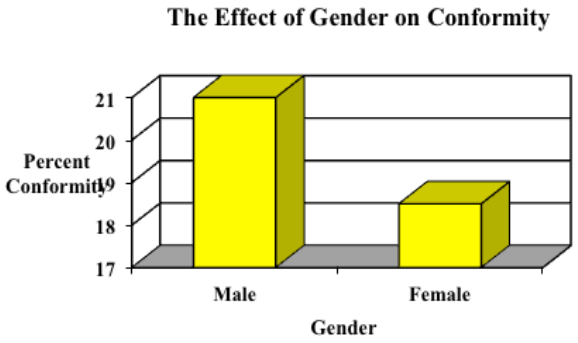

Figure 3. The Effect of Gender on Conformity. Male participants conformed more often than female participants.

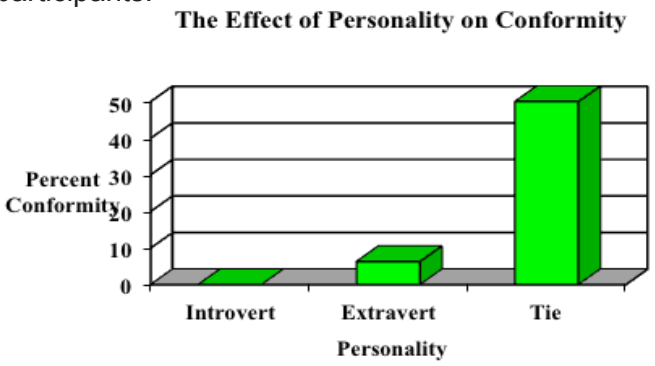

Figure 4. The Effect of Personality on Conformity. Introverts never conformed. Extraverts conformed but not often. The one person that tied on the introversion/extraversion test conformed six times.

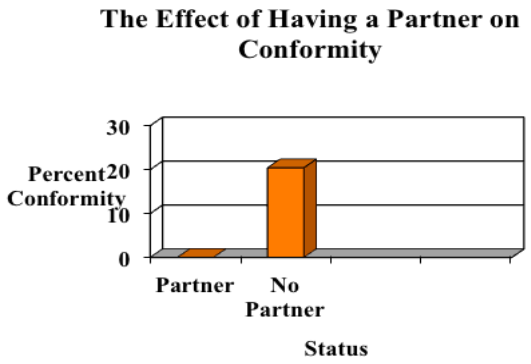

Figure 5. The Effect of Having a Partner on Conformity. Two participants had another student in the room agree with them on the correct answer. They did not conform at all.

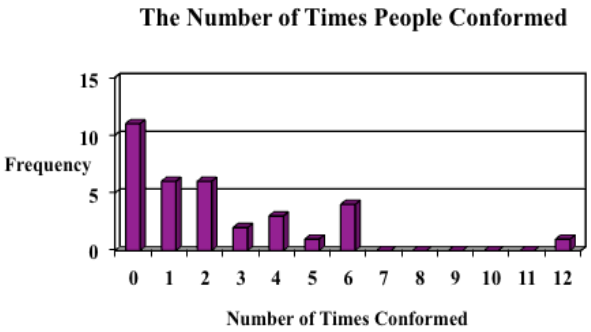

Figure 6. The Number of Times Participants Conformed. A frequency graph of the number of time participants conformed showed that as number of times conformed increased, generally frequency decreased.

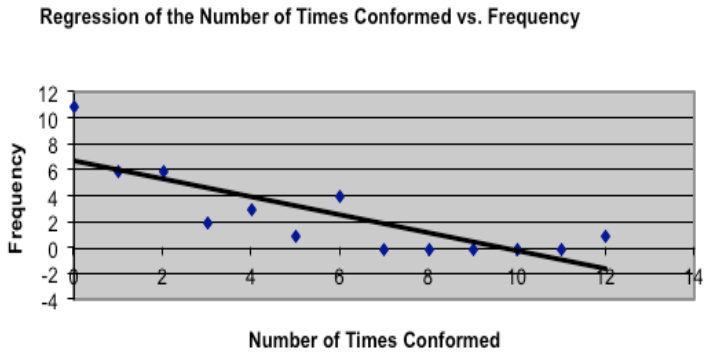

Figure 7. The Regression of Number of the Number of Times Conformed vs. Frequency. The equation of the least-squares regression line was y= -0.06561+6.8022. R= -0.0809986 r2= 0.0656077

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Losing by a Hair: The Effects of Facial Hair on Voting Appeal

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Abstract

Previous researchers have established that facial features can act as voting cues and influence voters' perceptions of a politician's beliefs and abilities. However, no study has determined whether facial hair is a liability for political candidates. This experiment examined the effects of facial hair on a politician's perceived aggressiveness, competence, political ideology, age and voting appeal. One hundred library patrons were randomly assigned to view one of four photographs of a supposed politician, each with a different style of facial hair. Participants then completed a survey measuring their perceptions of him. When compared to the politicians with facial hair, a clean-shaven politician was perceived to be significantly less aggressive, more competent, less conservative, more appealing to voters, and younger.

Introduction

Beginning in the early 1900s and extending into the modern day, the United States has experienced a gradual decline in the number of politicians with facial hair. In the past, facial hair was quite popular among politicians. Between the presidencies of Abraham Lincoln (1861-1864) and William Howard Taft (1909-1913), all but two Presidents had facial hair (Herrick, Mendez, & Pryor, 2010). However, Taft was the last President to have a mustache, and Benjamin Harrison (1889-1893) was the last president to have a beard (Knight-Ridder Newspapers, 1996). In addition, Thomas Dewey is thought to have lost a significant number of votes to Harry Truman in the 1948 presidential election because of his mustache (Buchwald, 1984, p. 3; Knight-Ridder Newspapers, 1996). Furthermore, at the beginning of the 110th United States Congress, less than 5% of Congressmen had facial hair (Herrick et al., 2010). The present study sought to examine how various levels of facial hair influence voters' perceptions of a politician's aggressiveness, competence, political ideology, voting appeal and age.

Many cognitive theorists have established that various physical attributes assist individuals in making judgments of others. According to one study, the limited information processing abilities of humans cause them to resort to heuristic inferential strategies in order to economize their perception and encoding of input (Terry & Krantz, 1993). The study goes on to say that individuals quickly form complex impressions of people from meager information, oftentimes a consensual schema. A schema is a hypothetical cognitive structure that functions essentially as a

set of rules governing how individuals perceive another person. Various traits are associated with schemata, and when a particular schema is activated, the associated traits are attributed to the target person in the form of a first impression. Many studies have established that facial hair attributes to impression formation by affecting perceptions of an individual's beliefs and abilities (e.g., Addison, 1989; Kenny & Fletcher, 1973; Pancer & Meindl, 1978; Terry & Krantz, 1993; Wogalter & Hosie, 2001). Voters are cognitive "misers" looking for shortcuts to evaluate political candidates, and oftentimes, facial features are used as voting cues (Bull & Hawkes, 1982; Hellström & Tekle, 1994; Herrick et al., 2010). One study gave realistic examples attesting to the importance of facial looks in political life by showing how mere facial photographs of British Members of Parliament led viewers to make interpersonal judgments of them (Bull & Hawkes, 1982). All of these findings support the theory that facial hair activates certain schemata and is therefore a liability for political candidates at the polls (Armstrong & Graefe, 2010; Herrick et al., 2010).

Previous research has established that facial hair is associated with increased perceptions of aggressiveness. Many studies have found that when compared to clean-shaven men, those with facial hair are perceived as more aggressive, dominant, and masculine (e.g., Addison, 1989; Kenny & Fletcher, 1973; Pancer & Meindl, 1978; Pellegrini, 1973; Reed & Blunk, 1990; Roll & Verinis, 1971). One study explained the association of facial hair with aggressiveness through evolutionary theory (Muscarella & Cunningham, 1996). According to the theory, facial hair evolved as a signal of threat and dominance because it increases the apparent size of the lower jaw. The jaw and mouth are associated with teeth, which were seen, evolutionarily, as a weapon.

Although unshorn men are typically perceived as being more aggressive, high levels of aggressiveness may be detrimental to a politician. Virility can be seen as politically helpful (e.g., an aggressive president is needed for issues such as war); however, being overly aggressive is generally unappealing to voters, as many Americans want to see politicians with more compassionate traits (Huddy & Terkildsen, 1993). According to one study, overly aggressive men seem more threatening; they are too supportive of the use of violent means to solve problems and not supportive enough of social policies (Herrick et al., 2010).

Although few in number, there have been studies stating that the presence of facial hair can influence perceptions of an individual's competence. One study found that bearded

men are perceived as more competent than clean-shaven men (Reed & Blunk, 1990). However, more studies found that facial hair decreases perceived competence (Muscarella & Cunningham, 1996; Terry & Krantz, 1993). According to one theory, beards evoke the schema of a virile man (Roll & Verinis, 1970). But since they are also associated with nonconformity (Pellegrini, 1976), they detract from perceived competence (Terry & Krantz, 1993). Therefore, it is believed that the presence of facial hair decreases an individual's perceived competence.

Few researchers have examined the effects of facial hair on perceived political ideology, and these studies have yielded inconsistent results. Studies have shown that bearded men are perceived as liberal, while clean-shaven men are perceived as conservative (Lino de Souza, Baião, & Otta, 2003; Pellegrini, 1976). On the other hand, another study found the opposite to be true (Herrick et al., 2010). Herrick et al. (2010) tested a sample highly relevant to the present study, while Lino de Souza et al. (2003) conducted their experiment in a foreign country. Moreover, facial hair fashions and political ideals are constantly changing (Pedersen, 2001). Facial hair preferences are likely to be different now than they were in 1976 when Pellegrini conducted his experiment. This suggests that a bearded face is associated with a conservative ideology, which may not hold true in other countries.

The impact of facial hair on a politician's general electability has been insufficiently examined. Findings from an experiment show that the rate of bearded applicants that are selected for professional leadership positions is lower when compared to non-bearded applicants (Shannon & Stark, 2003). Another study found that men with facial hair are not typically viewed as politicians (Hellström & Tekle, 1994). One study predicted that facial hair would have a negative effect on the evaluation of candidates in an election given that most politicians, especially in recent years, are clean-shaven. However, no empirical data has supported this conjecture (Armstrong and Graefe, 2010). In a recent study, it was hypothesized that facial hair would be disadvantageous at the polls because the unshaven politicians would be perceived as overly masculine (Herrick et al., 2010). Interestingly, it was found that men with facial hair did not differ from clean-shaven men in their general electability; however, the authors state that this finding may have been biased by the conservative sample or by the current wars in Iraq and Afghanistan. Overall, they still present the theory that facial hair is detrimental to a politician, but highly recommend further research.

Previous researchers have found that

facial hair increases perceptions of age, (Lino de Souza et al., 2003; Muscarella & Cunningham, 1996; Pellegrini, 1973; Wogalter & Hosie, 2001) but it is still debatable whether or not age is beneficial to a politician. One study states that there is an association of specific traits to older people, such as a sense of responsibility, experience, and wisdom (Lino de Souza et al., 2003) but, there seems to be a recent "youth movement" in American politics. In 2008, many new Congressmen and Senators were elected, most of them in their thirties and some even in their late twenties. For example, Aaron Schock, the youngest member of the United States House of Representatives, beat his two older competitors at age 27 in the 2008 elections. Schoenburg (2009) presents the idea that more people vote for younger politicians because they are the ones bringing change to America, while older politicians are perceived as having outdated ideologies. A good example of this is the presidential election of 2008. Barack Obama, a relatively young Democrat, gained public support with his slogan "Change We Need," eventually leading up to his victory over his older Republican competitor John McCain, who was frequently criticized for being "too old" and "unable to conform." In these tough times, American voters are looking for change, and younger politicians are advertising it.

Although there is no present literature examining whether the style of facial hair impacts a politician's voting appeal, an indirect relationship is believed to exist between the amount of facial hair on a politician's face and voting appeal. Full beards are seen as exceedingly masculine; therefore, bearded men are less electable, especially to women (Herrick et al., 2010). This overly masculine appearance gives the impression that bearded politicians are not gentle, compassionate or kind. In the experiment conducted by Lino de Souza et al. (2003), mustached men were preferred as leaders over bearded men. In another experiment, a mustached man was rated more likely to effectuate change than a bearded man (Roll & Verinis, 1971). For these reasons, it was hypothesized that a mustache would be more favorable to a politician when compared to a beard and a beard with a mustache.

While there are many aspects of the present study that have been researched in the past, several new contributions were made to the field of political psychology. There have been many studies that have found distinct relationships between facial hair, aggressiveness, and competence (e.g. Addison, 1989; Kenny & Fletcher, 1973; Pellegrini, 1973; Reed & Blunk, 1990 Roll & Verinis, 1971); but none have examined these effects in a political context. The present study also sought to clarify literary

inconsistencies regarding the effects of facial hair on perceived competence and political ideology. In addition, no studies have truly established whether facial hair is a liability for politicians at the polls, but the present study sought to find a definitive answer. Furthermore, the present study was the first to adequately examine the differences between various types of facial hair (mustache, beard, and beard with mustache) when measuring their effects on perceived aggressiveness, competence, political ideology, voting appeal, and age.

In order to determine the effects of facial hair on a politician's perceived aggressiveness, competence, political ideology, voting appeal and age, the following hypotheses were tested: (1) Compared to participants exposed to a politician with facial hair (mustache, beard, and beard with mustache), participants exposed to a clean-shaven politician will (a) report lower levels of perceived aggressiveness, (b) report higher levels of perceived competence, (c) report lower levels of perceived conservatism, (d) be more likely to vote for the politician, and (e) report that the politician is younger. (2) Compared to participants exposed to a bearded politician and participants exposed to a politician with both a beard and a mustache, participants exposed to a mustached politician will (a) report lower levels of perceived aggressiveness, (b) report higher levels of perceived competence, (c) report lower levels of perceived conservatism, (d) be more likely to vote for the politician, and (e) report that the politician is younger.

Method

Participants

The sample for the experiment consisted of 100 patrons at a public library located in a suburb within the New York Metropolitan Area. A power analysis was employed to obtain a sample size representative of the population. Each participant was randomly assigned to one of four conditions. To be included in the sample, participants had to be registered voters. In addition, written consent was required from all participants.

Materials

Four photographs of a supposed Congressman acted as the experimental stimuli. The first photograph displayed a clean-shaven man in professional attire with an American flag in the background. The purpose of this was to realistically imitate the Congressional photographs displayed on the United States government's website. The second, third, and fourth photographs showed the same man against the same backdrop. However, the man had a mustache in version two, a beard in version three, and both a beard and a mustache in version four. Adobe Photoshop was used to

add the facial hair to the photographs as well as the American flag background. The image of the man was taken from the University of Missouri System's website (Charton & Tinney, 2007). Prior to experimentation, the individual portrayed in the stimuli gave written consent to use his photograph in the study. The photographs are displayed in Figure 1.

Procedure

Prior to experimentation, approval by an Institutional Review Board was obtained. Additionally, permission from the library director was granted. The researchers explained that they were conducting an experiment concerning the public's responses to various photographs of politicians. Upon completion of the consent form, participants were randomly assigned to view one of the four photographs of the fictitious politician and were told to complete a survey asking for their perceptions of the politician. Participants were given as much time as necessary to complete the survey and were assured that their responses would remain anonymous. All participants completed the survey within 15 minutes after receiving it and proceeded to fill out a manipulation check. The manipulation check asked participants to recall the type of facial hair that the politician had. Immediately upon their completion of the survey and manipulation check, all of the participants were debriefed.

Dependent Measures

The Perceptions of Congressman Survey was created for use in the present study. Consisting of 29 items, the survey was composed of three scales (the Perceived Aggressiveness scale, the Perceived Competence scale, and the Perceived Political Ideology scale) and two single-item measures (the Voting Appeal single-item measure and the Perceived Age single-item measure).

Items one through seventeen were answered on a five-point Likert-type scale measuring agreement for particular statements. A response of one indicated strong disagreement with the statement. A response of six indicated strong agreement with the statement. Items 18 through 24 were answered on a six-point bipolar scale. For item 18, participants who marked one indicated that they felt the politician was very liberal. Participants who marked six indicated that they felt the politician was very conservative. For items 19 through 24, an answer of one was labeled "Very Unlikely," and an answer of six was labeled "Very Likely." Item 24 asked participants to report their likelihood to vote for the Congressman. Item 25 was open-ended and asked participants to estimate the age of the politician. Items 26 through 29 asked participants for demographic information, including their gender, race, year of birth, and political affiliations.

The Perceived Aggressiveness scale consisted of nine items and was adapted from Muscarella and Cunningham's (1996) Aggressiveness and Appeasement scales and Huddy and Terkildsen's (1993) Warmth/ Expressiveness and Instrumentality scales. The scale included statements such as, "This Congressman is aggressive." Three items on the Perceived Aggressiveness scale were reverse-scored to avoid a response set, and the scale had a Cronbach's Alpha of .90.

The Perceived Competence scale was adapted from Muscarella and Cunningham's (1996) Social Maturity scale and consisted of eight items. One question read, "This Congressman has experience in his area of office." The scale had a Cronbach's Alpha of .96.

The Perceived Political Ideology scale consisted of six items and was adapted from Herrick et al.'s (2010) Use of Violence and Compassion Group 2 scales. One item on the scale read, "What is the likelihood that this Congressman supports legislation that assists the military and defense?" One item on the scale was reversed-scored, and the scale had a Cronbach's Alpha of .91.

Written permission from the authors of the instruments was obtained prior to data collection.

Results

Five one-way analyses of variance (ANOVAs) were used to examine the effects of facial hair on perceived aggressiveness, perceived competence, perceived political ideology, voting appeal and perceived age.

An alpha value of $p < .05$ was used as the criterion for statistical significance. A t-test was employed to examine the effect of facial hair on perceived age. Pearson correlations were also used to correlate the dependent variables. Additionally, Tukey-HSD post-hoc tests were employed to examine the effects of the individual levels of the independent variable (i.e., clean-shaven, mustache, beard and beard with mustache) on perceived aggressiveness, perceived competence, perceived political ideology, voting appeal and perceived age. One proportion z-tests were used to determine how representative the sample was of the entire population.

An ANOVA revealed a significant main effect of facial hair on perceived aggressiveness, $F(3) = 5.80$, $p < .001$, $\eta p2 = .17$. Supporting the experimental hypothesis, participants who viewed the clean-shaven politician reported significantly lower levels of perceived aggressiveness ($M = 2.68$) when compared to participants who viewed the mustached politician ($M = 3.24$), the bearded politician ($M = 3.49$), and the politician with both

a beard and a mustache (M = 3.46). Tukey-HSD post-hoc tests did not reveal any significant differences between the mustache, beard, and beard with mustache groups. Results are displayed in Figure 2.

As hypothesized, facial hair significantly decreased perceptions of competence, $F(3) = 4.69$, $p < .01$, $\eta p2 = .14$. The clean-shaven politician was perceived to be more competent (M = 3.61) than the mustached politician (M = 2.68), the bearded politician (M = 2.97) and the politician with the beard and the mustache (M = 3.04). No significant differences between the mustache, beard and beard and mustache groups were found. Results are displayed in Figure 3.

As can be seen in Figure 4, participants who viewed the clean-shaven politician (M = 2.95) reported significantly lower levels of perceived conservatism when compared to participants who viewed the mustached politician (M = 3.90), the bearded politician (M = 3.75) and the politician with both a beard and a mustache (M = 3.89), $F(3) = 4.39$, $p < .01$, $\eta p2 = .13$. However, no significant differences between the three facial hair groups were found.

As depicted in Figure 5, participants who viewed the clean-shaven politician (M = 4.12) were significantly more inclined to vote for him than when compared to participants who viewed the mustached politician (M = 2.61), the bearded politician (M = 2.71), and the politician with the beard and mustache (M = 2.43), $F(3) = 10.25$, $p < .00001$, $\eta p2 = .26$. Contrary to the hypothesis, the three types of facial hair led to statistically equivalent expressions of voting appeal.

When analyzed using an ANOVA, the four types of facial hair led to statistically equivalent expressions of perceived age, $F(3) = 1.83$, $p = .15$, $\eta p2 = .06$; however, the observed power was unusually low. Researchers in the past have employed a t-test to examine the effect of facial hair on perceived age (Lino de Souza et al., 2003; Muscarella & Cunningham, 1996; Pellegrini, 1973; Wogalter & Hosie, 2001). When analyzed using a t-test, facial hair made the politician appear significantly older, $t(89) = -2.34$, $p = .02$. The clean-shaven politician was perceived as approximately three years younger (M = 46.38) than the politicians with facial hair (M = 49.48). This can be seen in Figure 6.

Perceived aggressiveness was negatively correlated with voting appeal, $r = -.52$, $p < .05$. Additionally, perceived age was significantly and negatively correlated with voting appeal, $r = -.38$, $p < .05$. These results are displayed in Figures 7 and 8, respectively.

Discussion

As hypothesized, facial hair was found to significantly increase perceptions of the politician's perceived aggressiveness. This finding is consistent with work of previous researchers (e.g., Addison, 1989; Kenny & Fletcher, 1973; Pancer & Meindl, 1978; Pellegrini, 1973; Reed & Blunk, 1990; Roll & Verinis, 1971) and can be explained by Muscarella and Cunningham's (1996) theory. Participants may have perceived the barbed politicians to be more aggressive than the clean-shaven politician because of seemingly larger size of the lower jaw. This may have given the impression that the politicians were antagonistic because of the evolutionary connection to ferocity. This finding may have also been influenced by common stereotypes. Participants often commented that the politician with both the beard and mustache resembled a lumberjack, an occupation that is associated with tremendous strength and virility. Additionally, there has long been an association in the media between mustaches and villainy (Roll & Verinis, 1971). This may have led participants to perceive the politicians with facial hair as highly aggressive.

Consistent with recent theories, aggressiveness was moderately and negatively correlated with voting appeal. The older the politician appeared, the less appealing he was to participants. Being overly aggressive was not appealing to participants, likely due to the fact that many Americans want to see a politician with more sympathetic traits (Huddy & Terkildsen, 1993). Additionally, the politicians who were viewed as highly aggressive may have also been perceived as too supportive of violent means to solve problems and not supportive enough of issues such as the environment (Herrick et al., 2010).

Overall, the politicians with facial hair were perceived as significantly less competent than the clean-shaven politician. This result supports the work of Muscarella and Cunningham (1996) and Terry and Krantz (1993); however, it disproves the findings from Reed and Blunk's (1990) investigation. The generally held stereotype is that most competent professionals are clean-shaven, while uneducated individuals tend to have facial hair. It is likely that voters would perceive a politician with a background requiring education as more competent than a politician who has less experience. In addition, Pellegrini (1976) found that a bearded face was associated with nonconformity. If this is true, the bearded politician's perceived nonconformity likely detracted from his perceived competence.

The clean-shaven politician was associated with liberalism, while the unshorn politicians were associated with conservatism. This finding is consistent with Herrick et al.'s

(2010) study. Many participants reported that the bearded politician looked like a conservative Amish man. This likely influenced their perceptions of his political ideology. Additionally, the politicians with facial hair were perceived to be significantly more aggressive when compared to the clean-shaven politician. In modern American politics, aggressiveness is often associated with conservatism. Those in favor of the right to bear arms tend to be conservative and often come off as aggressive. This explains why participants perceived the politicians with facial hair to be significantly more conservative than the clean-shaven politician.

The clean-shaven politician was significantly more appealing to participants when compared to all of the politicians with facial hair. Supporting the experimental hypothesis as well as the hypotheses of Armstrong and Graefe (2010) and Herrick et al. (2010), facial hair was detrimental to the politician. A variety of factors may have influenced this finding. Facial hair often evokes the schema of a virile man (e.g., Addison, 1989; Kenny & Fletcher, 1973; Pancer & Meindl, 1978; Roll & Verinis, 1971), and virility is generally unappealing to voters. In addition, facial hair can detract from an individual's perceived competence (Muscarella & Cunningham, 1996; Terry & Krantz, 1993). Moreover, facial hair makes individuals appear older at a time when voters prefer younger candidates (Lino de Souza et al., 2003; Muscarella & Cunningham, 1996; Pellegrini, 1973; Wogalter & Hosie, 2001).

Supporting the results of many previous studies (Lino de Souza et al., 2003; Muscarella & Cunningham, 1996; Pellegrini, 1973; Wogalter & Hosie, 2001), facial hair significantly increased perceptions of the politician's age. According to one theory, facial hair serves as a biological marker of physical maturation and therefore increases the perceived age (Lino de Souza et al., 2003). In addition, perceived age was negatively correlated with voting appeal. This finding is consistent with the recent "youth movement" in American politics. Younger politicians are perceived as more competent than older politicians and are therefore more appealing to voters (Schoenburg, 2009).

Contrary to the hypotheses, the three types of facial hair (i.e., mustache, beard, and beard with mustache) led to statistically equivalent expressions of perceived aggressiveness, perceived competence, perceived political ideology, voting appeal, and perceived age. In other words, all types of facial hair are detrimental to politicians at the polls. Common stereotypes may explain this finding. Voters may not want to vote for a political candidate who resembles the "mustached bandit," the "bearded Amish man," or the "hairy

brute" (Terry & Krantz, 1993). The limited sample size may have also influenced this finding.

While participants were randomly selected, the homogeneous nature of the sample is not entirely representative of the general population of American voters and therefore limits the external validity of findings. By comparing the present study's demographics to the national statistics from the 2009 United States Census using one proportion z-tests, several groups were found to be significantly underrepresented (e.g., African Americans and males), while others were found to be significantly overrepresented (e.g., Caucasians and females) (United States Census Bureau, 2009). Although participants were asked to report their likelihood of voting for the politician, they were not actually voting; therefore, their willingness to vote for the Congressman may not have been accurately measured. The verisimilitude of the Adobe Photoshop photographs may have also been a limiting factor. It would be more practical to present a politician with real facial hair.

Seeing as the present experiment was conducted within the New York Metropolitan Area, it would be valuable to extend this line of research by collecting data in various regions of the United States. Doing this would provide a broader sample that would be more representative of the population. It would also be interesting to conduct a similar experiment several years from now to see if voters' attitudes toward politicians with facial hair have changed.

It is clear that the number of politicians with facial hair has been gradually declining over the years, but, very few researchers have examined this phenomenon. The present study suggests that individuals are less likely to vote for politicians that are visually displeasing to them. Many voters make interpersonal judgments about politicians solely off photographs and do not fully understand or care about what the politicians believe. Therefore, it is of utmost importance that politicians appeal to voters ideologically as well as aesthetically. Results indicate that facial hair activates certain schemata and is a liability for political candidates at the polls. It makes politicians appear aggressive and incompetent. In this day and age, facial hair is used as a voting cue, and it is imperative that politicians seeking office do not grow beards or mustaches in order to maximize their chances of winning an election.

Figure 1. Photographs of politician

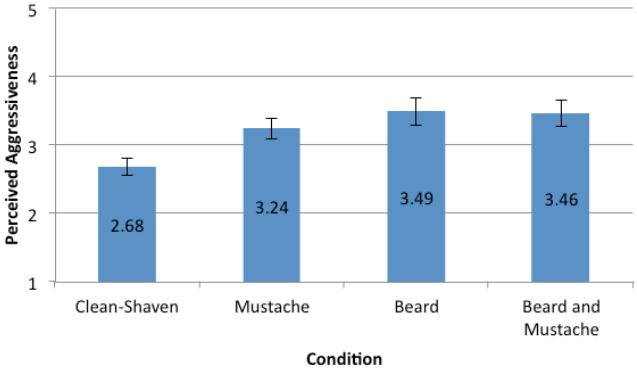

Figure 2. The impact of facial hair on perceived aggressiveness

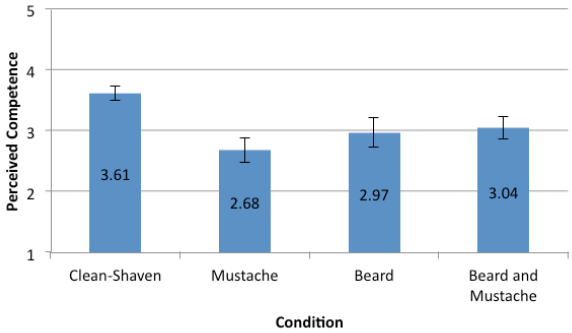

Figure 3. The impact of facial hair on perceived competence.

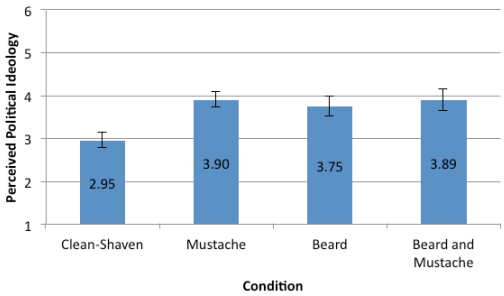

Figure 4. The impact of facial hair on perceived political ideology

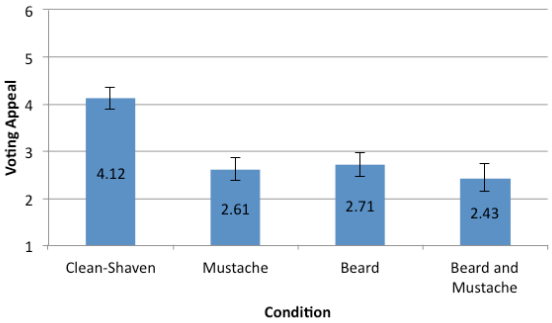

Figure 5. The impact of facial hair on voting appeal

	Aggressiveness			Competence			Political Ideology			Voting Appeal		
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Clean-Shaven	26	2.68	0.62	26	3.61	0.59	24	2.95	0.87	25	4.12	1.09
Mustache	23	3.24	0.71	23	2.68	0.98	23	3.90	0.85	23	2.61	1.16
Beard	21	3.49	0.88	21	2.97	1.13	21	3.75	1.30	21	2.71	1.15
Beard and Mustache	20	3.46	0.85	21	3.04	0.83	21	3.89	1.13	21	2.43	1.36
Total	90	3.18	0.82	91	3.09	0.94	89	3.60	1.10	90	3.01	1.36

Table 1. The impact of facial hair on perceived aggressiveness, competence, political ideology, and voting appeal

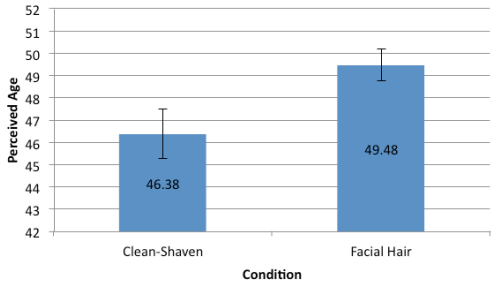

Figure 6. The impact of facial hair on perceived age

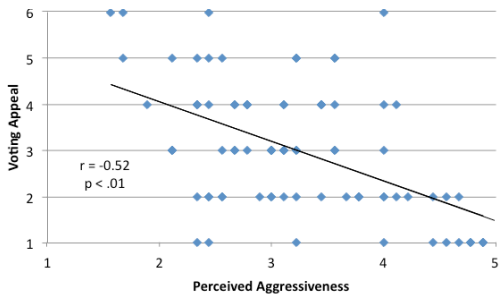

Figure 7. The relationship between perceived aggressiveness and voting appeal

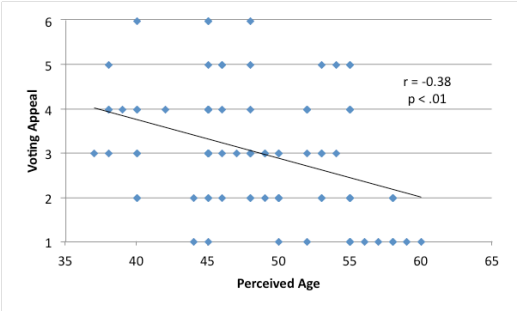

Figure 8. The relationship between perceived age and voting appeal

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Self Esteem vs. Determination

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Abstract

After watching a video demonstrating learned helplessness, a group of experimenters becamine intrigued with the subject. In the film, half of the students in a classroom were given impossible word scrambles, while the other half was given fairly easy word scrambles. The film showed how students learn to give up easily when they become discouraged by their other classmates' immediate success. After watching this film the experimenters used this this idea to form this experiment.

The goal of the experiment was to see if there is a correlation between self-esteem and determination. First high school students were given a self-esteem test created by Dr. Morris Rosenberg. They were asked to answer truthfully, and were ensured that their information would remain confidential. After the self-esteem tests were completed, students were given a five question quiz. This quiz consisted of word problems, sequences, and word scrambles. The last question was made impossible, so that students would not finish too quickly. Students' times were recorded as a way to measure their determination. Their time was then compared with the score they received on the self-esteem test.

Surprisingly, no correlation was found between self-esteem and determination. These results could be due to certain confounding variables that were encountered throughout this experiment.

Introduction

Learned helplessness refers to the hopelessness and passive resignation an animal or human learns when they are unable to avoid repeated aversive events (Myers 2001). This means that people who have failed in the past are more likely to give up in the future. Many experiments have already been conducted on this topic and have confirmed the results of learned helplessness.

One of the most famous experiments on this subject was done by Martin Seligman in 1975 and 1991. He strapped dogs in harnesses and repeatedly shocked them with no chance to escape the pain. Seligman would later place the dogs in a situation were they could escape the electric shocks by leaping over a hurdle, but they still would not. The dogs were conditioned to believe that they could not escape, so even when they were given the opportunity, they did not take it (Myers 2001).

The experimenters decided to branch off this idea of learned helplessness to see if there was a correlation between a person's self-esteem

and their determination. We hypothesized that a person with low self-esteem would give up earlier on a difficult task than a person with a higher self-esteem. This relates back to learned helplessness, because if people feel bad about themselves, they are less likely to work hard on difficult tasks.

The difference between Seligman's experiment and this one is that self-esteem became a factor. People, instead of dogs, were used as subjects. Participants' past experiences were evaluated using self-esteem thinking that would affect their determination in future situations. The purpose of this experiment was not only to see if there was a correlation between self-esteem and determination, but also to see how similar the results were to Seligman's results concerning learned helplessness.

Method

The participants in the study were high school students randomly selected from classes in McFarland High School. The selections were made from two Physical Education classes with students ranging from sophomores to seniors. Students enrolled in study hall, foods class, and marketing classes were also used, all of which included students from 9th to 12th grade.

Before the experiment began, participants were briefed and asked to sign a consent form to confirm their participation.

Procedure

The hypothesis of the experiment presumed that people with higher self-esteem would have more determination, and therefore work for a longer period of time on a difficult quiz. Participants took both a self-esteem test and a five-question quiz. Participants were informed that anything they put down on either quiz would be completely confidential since each person was known not by name but by the number listed on their test. The subjects were instructed to fill out the self-esteem test with complete honesty and to complete the five-question quiz to the best of their ability. They were also told that when they believed they had finished the quiz, they were to turn it in to the researchers who then recorded how long it took each participant.

The self-esteem test used was the exact same one that Rosenberg used in his experiment. The test consisted of ten questions in which the students rated themselves with answers of either strongly agree, agree, disagree, or strongly disagree. Each of these answers was given a score (0, 1, 2, or 3) and once the test was finished being graded, the scores were added up and given a score out of 30.

The five-question quiz consisted of problems such as word problems, pattern and number sequences, and word scrambles. The problems on this quiz became increasingly harder. The

decision to format the quiz in such a way was intentional, preventing the subjects from becoming discouraged early on. In order to prevent the participants from finishing too quickly, the last question on the quiz was deliberately made impossible to solve. The actual answers to the quizzes were not as important as the time each participant took, but the quizzes were graded regardless and placed out of four.

Follow Up

At the end of each trial, the students in each of the six classes were immediately debriefed after everyone finished the quiz. They were told about the intentions of the study and re-informed of their confidentiality. They were also made aware of the possibility that the information could be published, but confidentiality was reinforced. Lastly, they were instructed to contact any of the researchers with any questions or concerns they may have had after the experiment was finished.

Results

The data compiled from each of the six classrooms proved the hypothesis wrong. Self-esteem was found to have no correlation with determination. The students were asked to answer the self-esteem quizzes with honesty and were reassured that all information would remain confidential. No names would be given, and participants would be known by the number written on their sheets. We found that students' self-esteem ranged from as low as five to as high as thirty, thirty being highest possible score. Most of the students' scores were found in the upper teens and twenties. According to Rosenberg, anything above fifteen was thought of as normal, with few self-esteem issues; however anything below this was considered unhealthy and indicated the presence of self-esteem issues. The results were as suspected. Most students scored highly (there were several thirties), while some scored well below average.

After the self-esteem tests were collected, students were instructed to start their quizzes. When the students felt they were finished, they were asked to turn in their tests and a time was then recorded. As was suspected, the times ranged greatly. The lowest time was 2:40, and the highest was 12:29. Most classes' times were chunked together; once one student handed in his or her quiz, the rest of the students would hand in their quizzes shortly after. The average times found were between three to six minutes, while a few outliers took more than ten minutes. We also figured out the number correct out of four (excluding the fifth impossible question) each student received, but this was not measured.

A high school math teacher was consulted, and scatter plot graphs were created to show the correlation between the time that was taken on

the quiz and the score each student received on the self-esteem quiz. The time was changed to seconds and then the data was entered to form a scatter plot. All the data was entered into charts. The graphs showed that there was no positive or negative correlation between the two variables. Each class looked very different from one another, but for the most part the points were scattered and randomly placed on the graph. This proves that there is no correlation between self-esteem and determination.

Discussion

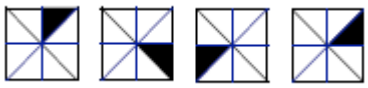
Some potential errors with the experiment are the environment the students were in while completing the tests and the distractions they were surrounded by. Because six different classes of students were tested, the environment they were in varied. While three of the classes were in a normal classroom seated at desks or tables, two of the classes were in the gym and were seated on the floor, and the last class was in a computer lab. The students were also presented with a number of different distractions. Many students did not take the quiz seriously, and were talking throughout the experiment. If it were to be redesigned, all student participants would be placed in the same environment. If the participants had been seated in a classroom separated by desks, the testing may have been taken more seriously. Also, a small number of students should be chosen, rather than a whole class of students. This method limits distractions and peer pressure by classmates, preventing students from feeling rushed and pressured by those that are giving up more quickly.

Since the results were not statistically significant and the hypothesis was wrong, it was concluded that self-esteem does not play a part in determination. One explanation for this was that the students did not take the experiment seriously. Another was that some of the participants were older than the researchers and did not have as much respect for researchers as they would for an authority figure. Students were also interrupted in the middle of their class work so they were all rushed through the test in order to continue their work. This could have resulted in pressure to compete the work faster. It is also possible that a lot of the students did not have the motivation to really try on the quiz, so as they saw other peers finishing, they were more inclined to give up. Many of the classes also had a wide range of grade levels in the classroom, possibly leading the students of younger levels to feel as if they needed to be done in the same time as the older students.

Sample Quiz

Please answer the following questions to the best of your ability. If you cannot figure out any questions feel free the pass or skip that question. Remember all the quizzes are confidential.

1. For the following sequence of figures, determine the possible pattern, and draw the next figure according to the pattern:



2. List the next three terms to complete the following pattern:

0,1,3,6,10.....

3. At a volleyball game, the players stood in a row ordered by height. If Kent is shorter than Mischa, Sally is taller than Mischa, and Vera is taller than Sally, who is the tallest and who is the shortest?

4. Four years ago, Jane was twice as old as Sam. Four years on from now, Sam will be 3/4 of Jane's age. How old is Jane now?

5. Unscramble the following word:

EMEERTPEUPT

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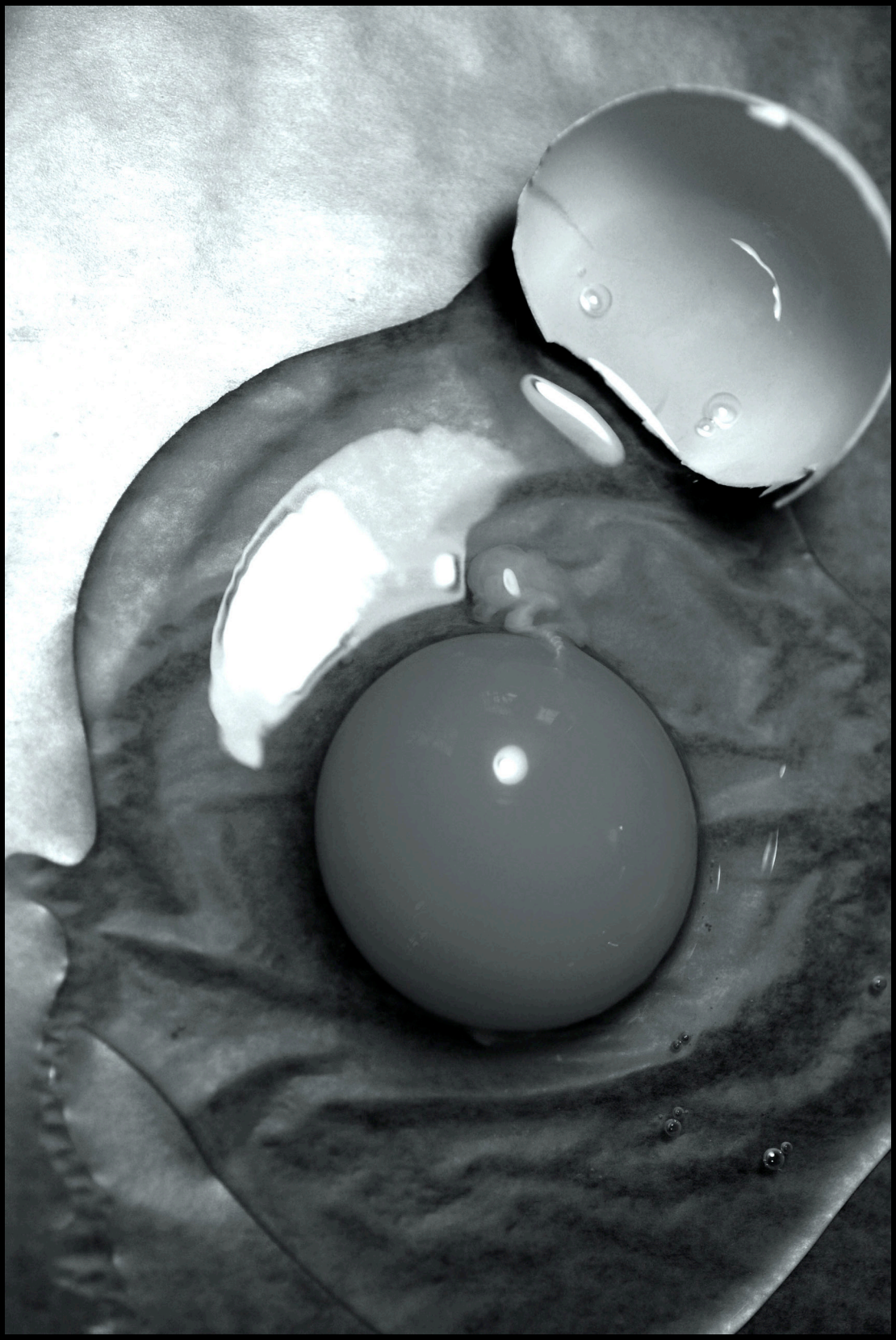
Inside Psychology



In The Loop? Cell Phone Addiction

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Introduction

In the information age, the benefits of technology are seen every day. Computers have become faster and can hold more data, the Internet connects people all around the world, and cell phones allow people to do business and parents to keep track of their children. While benefits are blatant, dependence on technology has become so great that some are becoming addicted. Cell phone addiction is an emerging dependence which inhibits both adults and teenagers from leading normal lives. This article will explore what it means to be addicted to a cell phone, how it is becoming a major issue, and what can be done to remedy the addiction.

What it means to be addicted to a cell phone

An addiction is a compulsive dependence on a behavior or substance that has both physical and psychological components. It is characterized by the building up of a tolerance (the need for a greater amount of the behavior or substance to produce the same effect) and physiological withdrawal symptoms when addictive cravings are not satisfied.

Addictions can become especially problematic when they begin to negatively affect the way a person lives their life. People who are consumed with an addiction exhibit impaired judgement, lack of motivation resulting in shifted priorities and antisocial behavior ("Psychology," 2004).

Withdrawal occurs when people attempt to break an addiction. The stronger the addiction, the harder it is to break. Typical emotional withdrawal symptoms include anxiety, restlessness, poor concentration and higher levels of irritability. Physical withdrawal symptoms include muscle tension, faster heartbeat, sweating and tightness in the chest. These symptoms occur because the body is not used to being without the substance, and therefore has trouble functioning normally without it ("Withdrawl", 2001).

While cell phones do not contain chemicals that the body adapts to, one can become psychologically dependent on the feeling of being connected. This leads to compulsive behaviors such as constantly checking a cell phone or being unable to leave the house without a cell phone. The "cycle" of addiction is as follows: first, a person will do the behavior because it feels good, or "sensation seeking", and then they do the behavior because it makes them feel better, or "self-medicating"

(Webster, 2002). A person can transition quickly from the voluntary period of their addiction to the involuntary and compulsive period of their addiction.

In September of 2006, Good Morning America Weekend Edition challenged a couple to go without cell phones for five days and track their "withdrawal" through video diaries. Before the challenge, the couple used over 4,000 minutes a month on their phones and described their cell phones as "vital to their lives" ("Can you", 2007). Throughout the challenge, the couple experienced distress and distrust of each other, and both failed to actually go five full days without using their phones. Dr. Harris Stratyner of Mount Sinai Medical Center administered the challenge. He was fascinated when he saw that the cell phone had become the middleman in their relationship, and described the couple as having "classic signs of addiction" ("Can you", 2007). Similar to a drug but without the chemicals, cell phones were able to produce typical emotional withdrawal symptoms.

How Cell Phone Addiction is Becoming a Major Issue

In June of 2008, two Spanish children, ages 12 and 13, were admitted to a mental health institution to be treated for their addiction to their cell phones. The children were reported to have "serious difficulties leading normal lives" because of the amount of time they spent on their phones ("Spain", 2008). Both children were doing poorly in school and had begun lying to their parents since the cell phone "addiction" escalated. The drop in grades and bad behavior are examples of classic consequences of a serious addiction. Similar to a drug addict going through a detox process, the children had to learn to cope without their cell phones for the three months while they were in rehab.

While most teenagers are not sent to rehabilitation for cell phone use, cell phones are changing the ways teenagers view themselves and their peers. According to a CTIA survey of 2000 American teens, cell phones have "become a vital part of their identities" and are considered a valid measure of social status and popularity (Reardon, 2008). The survey reported that 28% of teens see having the latest, coolest cell phone as "absolutely essential" because their phones "say things about them as people" (Reardon, 2008). This addictive behavior could possibly be explained by Abraham Maslow's Hierarchy of Needs, a theory that ranks the "needs" people must meet, in order, before they can reach their true potential. One of the steps on the way to the highest level, "self-actualization" is the need for belonging with both friends and family. Maslow's hierarchy of needs explains addiction to the feeling of being connected through the need for

belonging (Kassin, 2004).

Cell phone overuse becomes a bigger problem if the user has "underlying" depression or anxiety (Frawley, 2007). When anxiety disorders are paired with the stress that comes when phone calls and messages are not answered immediately, mild depression or anxiety can actually worsen.

What can be done to remedy the "addiction"

The suggestions for treating a "cell phone addiction" are simple. Like any other addiction, the best way to overcome it is step by step. Down-grading to a simpler phone with less features means less applications to constantly check. The number of hours that the phone is used should be limited. This is especially important for parents who think their children are addicted to their phones ("Spain", 2008).

Conclusion

While recent advances in technology, cell phones especially, claiming to connect people to their business and personal lives are alluring and seem convenient, the level of dependence people have on technology is only getting worse, and is affecting people at younger and younger ages. With both physical and psychological ramifications, an addiction to cell phones is debilitating to different aspects of a person's life. Cell phone addiction cannot be "treated" because it is not an actual disease or disorder, but cell phone use can be limited in order to reduce the level of addiction or the risk of becoming addicted.

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The Psychology of Terrorism

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Introduction

Terrorism is defined as the "systematic use of terror especially as a means of coercion" ("Terrorism"). The word "terrorist" was first used during the late 18th century in France, during the Reign of Terror, part of the French Revolution (Furstenberg, 2007). Since then, the image of who a terrorist is and what that person does has changed, and in recent decades, more and more nations have been affected by terrorist attacks. In the 1970's, the study of the psychology of terrorism emerged as a response to the increasing number of terrorist attacks. During the 1970's and 1980's, much of the research related to European movements, such as the Irish Republican Army in Northern Ireland and the Red Army Faction (Baader-Meinhof Gang) in Germany. However, recently attention has been directed toward Islamic-fundamentalist groups such as al-Qaeda. This article explores several theories concerning terrorist motivations and the different approaches researchers use when studying terrorism.

Mentally Ill vs. Sane

For years, the most common explanation given as to why someone transforms into a terrorist was that they were mentally unstable and most likely a psychopath. However, studies about mental illness in terrorists have shown that mental illness is not the answer. In fact, "comparisons of terrorists with non-terrorists brought up in the same neighborhoods find psychopathology rates similar and low in both groups" (McCauley). This data strengthens the theory that terrorists are generally rational, logical people who act the way they do because of personal choice or societal pressure, not because of a mental imbalance. The planning and calculation required to plan a terrorist attack demands intelligence and focus; therefore individuals suffering from mental illness would not have the mental capacity to successfully complete these tasks. Overall, there is more evidence supporting the idea that the majority of terrorists who belong to a terrorist organization are sane people.

Four Stages

In 2003, Randy Borum, Ph.d. published an article about the progression from a regular member of society to a terrorist. In it, he outlines a four-stage process that most terrorists go through. First, the person identifies an adverse component of his or her environment. This may be high unemployment rates, lack of opportunity or any other factor that would inhibit personal growth. Then, the person realizes that other

people are not suffering due to this adverse factor. A young person may realize that other young people in different countries have fewer problems finding employment and supporting themselves, while they cannot find a job in their country. This creates a feeling of injustice. Next, the person finds a group to blame for this adverse condition. For example, in terms of unemployment, people often direct their sense of injustice at immigrants for "stealing" their jobs. Consequently, the person characterizes the group who is responsible for the adverse condition as a fundamentally bad or evil group of people because "good people would not intentionally inflict adverse conditions on others" (Borum, 2003). The act of characterizing a group of people as "bad people" dehumanizes them and lessens the emotional impact of committing a violent act against them (Borum, 2003).

Approaches

Drive Theory (Frustration-Aggression) is known as the "master explanation" for aggression. It is a two-part theory stating that "aggression is always produced by frustration, and frustration always produces aggression" (Borum, 2004a, p.12). However, empirical evidence shows that frustration does not always lead to aggression. The drive-theory hypothesis suggests that only frustration caused by extreme disagreeability will lead to aggression. Thus, this research implies that frustration leads to anger, which consequently leads to aggression. While subsequent research findings have, at times, been inconsistent or contradictory "it is reasonable to conclude that aversive stimuli do facilitate, but probably not instigate, aggressive behavior" (Borum, 2004a, p.12).

The Social Learning theory posits that behaviors are learned through contingencies, and established through actions and the implications of these actions. According to this theory, behaviors that produce positive or desired outcomes are repeated, while behaviors followed by aversive consequences are extinguished. Although behavior can be learned and reinforced through personal experience, it can also be indirectly encouraged through speculation of contingencies in one's environment. Aggression can be considered an example of a learned behavior. Thus, "it is argued that through observation we learn consequences for the behavior, how to do it, to whom it should be directed, what provocation justifies it, and when it is appropriate" (Borum, 2004a, p.13). Therefore, since terrorism is an extension of aggression, it can also be deemed a learned behavior.

Another approach to studying terrorism is social psychology. Group dynamics and the desire to be a part of a society, even if it is outside of the mainstream, are important reasons

as to why a person joins a terrorist organization (Hudson, 1999). These group-based cognitive processes are also important factors in keeping terrorist groups together. After joining a terrorist organization, membership in that organization becomes the most important part of how a terrorist identifies him or herself. Leaders can exploit the fact that belonging to the group is so important to its members by applying tremendous amounts of pressure to comply with the risk of expulsion (Borum, 2004b). The force that keeps these groups together despite often high levels of internal tension is defining something or someone as the common enemy. The organization is good, the enemy is bad, and as long as there is an enemy, the group will be able to overcome internal dissidence (Borum, 2004b). The theories of social psychology are perhaps the most substantial arguments to the theory that all terrorists are mentally unstable. Members of terrorist organizations follow what is termed "psycho-logic" (Hudson, 1999, p. 28). According to this theory, people join terrorist organizations because the organization's definition of good and evil is aligned with theirs. While this definition may represent a flawed sense of reality, the rest of the cognitive and behavioral processes follow a logical order. This "psycho-logic" is the reason that terrorist organizations are successful in recruiting members. The leaders know their audience and market the organization in a way that makes rational sense to the recruits (Borum, 2004b).

Case Studies

Adam Yahiye Gadahn, formerly known as Adam Pearlman, was born in Southern California to a Christian family although Gadahn's father had converted to Judaism from Christianity. As described by his peers in Santa Ana, CA, Gadahn was very introverted and had very limited social interaction. At the age of 17, Gadahn was exposed to Islamic ideology by studying the religion at the Islamic Society of Orange County, California. In such an environment where individuals share similar beliefs, group polarization can occur where peoples' initial views are entrenched and intensified merely by the presence of others holding the same beliefs. Additionally, positive reinforcement from like-minded group members could largely account for developing or hardening views. Once an individual becomes part of a group, such as terrorist groups with extremist views, deindividuation can occur, causing someone to engage in violent acts or to act in a manner that is aberrant. This fostering of hostile behavior and encouragement by like-minded group members could also promote mob mentality, which is the tendency of people to behave in ways that imitate actions of others in their group. Two years

later, following his conversion to Islam, Gadahn was arrested for assaulting his former mentor, Haytham Bundakji, due to Bundakji's supposed intimacy with the Jewish Community and "interpretation of Islam" (Adam, 2007). In 1998, Gadahn moved to Pakistan and was integrated into Al Qaeda personnel as a translator and propagandist.

David Headley, born a Pakistani-American named Daood Gilani, was born to a Pakistani father and an American mother. After his parents' divorce, Headley moved to Pakistan with his father where he was raised in a strict Muslim environment until returning to the US where he lived with his mother who worked as a bartender in Philadelphia. The contradictory circumstances under which he was brought up could have generated internal cultural conflicts which may have resulted in his radicalization. Headley's mother explains that "he would clearly state he had contempt for infidels. He kept talking about the return of the 14th century, saying Islam was going to take over the world" (Fitzpatrick, Fletcher, & James, 2009). Headley "allegedly received training from Kashmiri separatist group Lashkar-e-Taiba (LeT) from February 2002 to December 2003. The group, which aims to drive Indian forces out of the disputed territory of Kashmir, is considered a foreign terrorist operation by the U.S. government" (Fitzpatrick et al., 2009). Headley changed his originally Pakistani name to an American name in order to make his frequent travels to India easier. After scoping out the areas surrounding the Taj Mahal Hotel in Mumbai, Headley proceeded to carry out an attack on the hotel in 2008 resulting in the massacre of hundreds of people. The frustration-aggression theory could provide some explanation as to why Headley became so radical in his beliefs. The distress and pain caused by his parent's divorce could have generated feelings of alienation ultimately influencing his transformation. The frustration he harbored from his parents' divorce could have, in turn, produced feelings of disappointment in him which could have evolved into hostility and aggression. This theory, along with other social factors, could provide insight into Headley's dramatic revolution into one of the world's most brutal terrorists.

Conclusion

When analyzing a person's motivation for becoming a terrorist, it is difficult to ignore economic, social, and religious factors to focus solely on psychological reasons. Therefore, it is difficult to make psychological diagnoses of what type of person a terrorist is before becoming a terrorist. Also, different researchers have found different reasons and different characterizations of terrorist motivations. Some psychologists blame the terrorists' environments, and others

see the catalyst in personal failures. One generally agreed upon idea, though, is that as a population, terrorists "appear to have been unsuccessful in obtaining a desired traditional place in society, which has contributed to their frustration. The underlying need to belong to a terrorist group is symptomatic of an incomplete or fragmented psychosocial identity" (Hudson, 1990, p. 25). While the reasons for their personal failures may vary, it is an accepted theory that most members of terrorist organizations have been unable to find a role in whatever social structure they were born into. In terrorism, just as in any other field of psychology, the varying theories, ideas, and the numerous exceptions to the rules make it difficult to ascribe one overall reason or solution. Although it is difficult to attribute the cause of an individuals radical transformation into a terrorist, there are numerous developing theories and ideas, which can provide insight into this progression.

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Learned Helplessness

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Learned helplessness, in its generic dictionary form, is defined as "a mental condition in which one becomes unable to help oneself due to previous failed attempts at controlling one's life" (Learned, n.d.). This is a fairly new concept that was first researched in the 1960's and is increasingly being identified as the root of modern problems such as depression, poverty, and failure to thrive. Learned helplessness is therefore believed to affect large portions of the world's population, and should continue to be studied closely.

At first, learned helplessness seems to contradict one of the most fundamental psychological principles: operant conditioning. The term operant conditioning was coined by renowned behavioral psychologist B.F. Skinner, referring to instincts present in both humans and animals to continue behaviors once they are reinforced. In other words, a subject will continue a behavior to either avoid a negative response or to obtain a positive one. For example, if a group of dogs was subjected to an aversive stimulus such as a shock that could only be ended through pressing a lever, then the dogs would be reinforced negatively to continue to press the lever in order to avoid the pain. However, unexpected results occurred when this experiment was slightly modified by University of Pennsylvania psychologist Martin Seligman in 1967. In Seligman's experiment, there were three groups: Group A consisted of the dogs that were merely harnessed (distressed) for a duration of time then released. Group B consisted of the dogs that received shocks but had a lever to end the pain. Group C consisted of the dogs that received shocks but had a lever that did not relieve the pain. Seligman found that the dogs in group A and B quickly recovered from the distress, but that the dogs in group C remained traumatized, resulting in an overall sense of apathy and depression-like symptoms (Seligman, 1967). Seligman therefore stumbled upon the idea of learned helplessness which has been accepted as a psychological condition ever since.

In the 1970's Seligman's theory was reformulated to relate to depression. In fact, the two are intertwined to a certain degree. According to theorists, learned helplessness results in depression if three factors are in occurrence; the individual is aware of uncontrollable factors in their environment, the individual views the situation as unchangeable, and the individual blames him or herself for their helplessness. The two seem to be intricately intertwined, as it stands to reason that a common symptom of depression is feelings of helplessness.

Poverty

A primary cause of learned helplessness is repeated exposure to events that are perceived by the individual to be uncontrollable. This may help to explain the cycle of poverty. Many persons struggling to live amidst poverty may reach the conclusion that the amount of effort they put forth is futile, as they believe that they are incapable of changing their present state. This usually occurs after an individual attempts to break free of the cycle of poverty repeatedly, and repeatedly fails. The person may then adopt the belief that a change of state is implausible, rendering the situation as completely out of his or her control.

Rather than continue attempts to improve upon their situation, the poor who suffer from learned helplessness will often give up and accept what they have come to believe is their fate. The eight hour, five day work week though typical, may not be possible for these afflicted individuals. Although they observe that it works for others, they are overwhelmed by the prospect that it will not work for them. In actuality, the primary force holding these people back is their apathetic perception of themselves.

The homeless, at the lowest tier of poverty, are prime examples of the detrimental effects of this phenomenon. Day after day many traipse through the same routes begging for money and hoping for generous onlookers. Usually, there are more than a few of these onlookers. Therefore, every time the homeless person is given something without having to work for it, the belief that he or she can live this way is reinforced (Pagliarini, 2010). This is essentially what it means to 'learn' to be helpless. Generational poverty, which is poverty that occurs in families where two or more generations are affected, has also been linked to learned helplessness (Engle, n.d.). Here, the sentiments of defenselessness against poverty are passed on to the children of the affected, who then adopt the same point of view and further continue the cycle (A Second Theory, 2011).

Elderly

Seligman's theory can be further tied to problems affecting the elderly, namely that of failure to thrive. This term refers to a deviation from the normal that is characterized by declining vigor, weight, function, and reserve (Woolley, 2004). Originally only a condition applied to infants, it has now been expanded to also affect those in their last years of life. Failure to thrive has been used to "denote a range of circumstances including physical and mental deterioration, abuse and neglect, and rapidly progressing frailty" (Woolley, 2004).

The basis of this theory is that by referring to patients using the term 'failure to thrive', can "reinforce the stereotype of elderly people as

demented and decrepit" and "may actually hinder the urgent search for treatable, reversible causes of an elder's deterioration" (Woolley, 2004). Further, it has been speculated that the label promotes an "intellectual laziness" among the elderly (Woolley, 2004). Relating to the condition of learned helplessness, these individuals begin to see themselves as incapable thereby accelerating their demise.

Clara Fitzgerald, a health speaker at Senior Years Family Education Day held in Campbellford in 2005, is well versed in the connection between learned helplessness and the elderly. Fitzgerald asserts that caretakers of the elderly often inadvertently encourage them to be more dependent on their services and become "less engaged in life" overall (Learned Helplessness an Issue, 2005). If they are continuously assisted by others because of this perceived incapability, they may learn to believe they are helpless, even if this is not the case. The help that is being provided may have the opposite of a beneficial effect despite the good intentions, as passivity is taught and reinforced.

In the words of Martin Seligman, "uncontrollable events can significantly debilitate organisms; they produce passivity in the face of trauma" (1972). Learned helplessness is a serious problem because once "a person has adopted a learned helplessness attitude, the likelihood of developing further skills and resources is significantly reduced," which can hinder development at any age (Kastenbaum, 1993). Although the afflicted groups form large swaths of the population, learned helplessness can manifest itself in many other forms. It does not discriminate; it can happen to anyone, at any age. In fact, most people are afflicted with symptoms at some point and merely unaware, but are able to pull themselves out before a downward spiral results.

When combating learned helplessness, it is important to remember that the afflicted individuals still have the power to change unpleasant circumstances, but that irrational schemas in their minds have become impediments to changing their behavior. In order to change the behavior, one must make an effort to go against the schema to achieve at what they are convinced they cannot.

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