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THE SOCIAL PERCEPTIONS OF THE
HIGHLY INTELLIGENT

being

A Thesis Presented to the Graduate Faculty
of the Fort Hays State University in
Partial Fulfillment of the Requirements for
the Degree of Master of Science

by

Robert J. Fossum

B.S., Fort Hays State University

Date _____

Approved _____
Major Professor

Approved _____
Chair Graduate Council

ABSTRACT

Mass media is portraying highly intelligent people as having noticeable deficits in their social skills. Shows such as *The Big Bang Theory* are very popular and watched by millions. This suggests that the population has a perception of intelligent individuals being odd and not having many friends. This study looks at how perceived intelligence affects the likeableness of an individual. The perception of intelligence was raised or lowered according to the grade level of the words used in several descriptive paragraphs. Non-verbal cues were eliminated by using written paragraphs rather than individuals speaking. It was expected that perceived intelligence would be inversely correlated with likeableness, and that this bias against higher intelligence would be stronger for a hypothetical women being rated than for a hypothetical man. Support was found for the basic hypothesis that perceived intelligence was negatively correlated with perceived likeableness, but this negative relationship was no stronger for women than it was for men.

Keywords: Intelligence, Loneliness, Vocabulary, Stereotypes, and Gender

ETHICS COMMITTEE STATEMENT

The research described in this thesis utilized human subjects. The thesis prospectus was therefore examined by the Human Subjects Research Committee of the Psychology Department and the Institutional Review Board of Fort Hays State University, and found to comply with Title 45, Subtitle A – Department of Health, Education and Welfare, General Administration; Part 46 – Protection of Human Subjects.

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INTRODUCTION

Defining intelligence is not simple (Hockenbury & Hockenbury, 2006). Charles Spearman, a British psychologist, believed that intelligence is a general mental capacity, what he called the g factor. Spearman would call it a person's mental energy. Lewis Terman, part creator of the Stanford-Binet Intelligence Scale, also was a supporter of single factor intelligence, calling it the intelligent quotient (IQ).

However, Robert Sternberg proposed a conceptualization of intelligence that he labeled successful intelligence (Sternberg 1996). He broke it into three types of intelligence. Analytic intelligence is the mental processes used to learn how to solve problems. Creative intelligence is taking the knowledge and skill a person already has and using them to deal with new situations. Practical intelligence is considered the ability to adapt to the current environment. This is commonly known as "street smarts." Sternberg makes it clear that he feels IQ score is not a good basis for intelligence.

The study to be outlined here is based on the idea that though something like analytical intelligence may be what most people perceive as "intelligence" it is more the street smarts (knowing what to say and what not to) that is associated with the perception of personal likeableness. People may intuitively be tapping into Sternberg's definition where these two different forms of intelligence may be independent of each other, and may also believe that having an excess in one may be related to a shortage in the other.

"I'm not insane, my mother had me tested!" This is a common refrain from Sheldon Cooper, a main character on the popular television series, The Big Bang Theory. The series' premise centers around a group of highly intelligent people behaving in a manner so odd and socially awkward that others question their sanity. The main

characters are four males who are very intelligent. These four characters are portrayed as having odd interests and being socially inept. Sheldon, who possesses the highest intelligence, seems to have social capabilities that are the inverse of his intellectual gifts. With this increase in intelligence, the writers convey Sheldon as having the most severe peculiarities and the strongest deficits in social skills of the four.

The popularity of the show lies in the inherent humor of watching others, especially those with intelligence not accessible to most people, struggle so much with basic, everyday human interaction. For most people, navigating a simple conversation or recognizing and reacting to strong emotions are unconscious and virtually effortless, but the series portrays such mundane tasks as confounding for the leading men. According to the theory of intelligence as a general factor, a highly intelligent person should be able to adapt and improve his or her social skills until they can outperform others. Pervin (2003) explains the concept of specific intelligence as the idea of task or domain specific intelligence rather than a general intelligence. With specific intelligences, it would not be abnormal to have a high rating in one specific intelligence and a low rating in another. Hence, Sheldon could be capable of solving complex theoretical physics equations and problems, but be utterly clueless when confronted with a companion's basic human emotion like sadness or anger. On the show, it appears Sheldon's intelligence seems to hinder his social abilities.

Another statement this show makes is that the higher the intelligence in an individual, the lower his or her social abilities are. The popular success of this comedy suggests that there is a common perception that the intellectual abilities of an individual

are inversely related to their ability to function in a social setting. This perception includes the lack of friends (isolation) outside of their own social circle, said circle consisting solely of others with similarly limited social abilities. Society at large seems to assume that the only people willing to deal with a person of such low levels of social skills are others with an equally low level of social ability. This has a basis in reality because individuals that lack best friends often end up being best friends with each other. Their friends are chosen from the leftover pile (Bowker, Fredstrom, Rubin, Rosekrasnor, Booth-La Force, & Laursen, 2010). The television series distills this idea down to the concept that only what are today often referred to as geeks can tolerate other geeks. This comedy is being watched by millions and perpetuating a mindset, that high intelligence is linked to poor social skills. The series' humor would not work if the audience did not understand and acknowledge.

Cottrell, Neuberg, and Li (2007) found that out of a choice of 13 traits, intelligence landed in the bottom half when looking for the ideal person. When asked for the one trait most necessary in the ideal person, intelligence was never chosen. The characters on the television show seem to prize most a trait that others consider less desirable in an ideal person, which coincides with their inability to develop the traits needed for successful social interactions.

In the following literature review, I first will go over a number of factors that may be relevant to the possibility that highly intelligent people have low likeableness, not only as a cultural stereotype but also in reality. Then I will address the problem of social perception of highly intelligent people, especially as it relates to first impressions. After

that, I will close the general literature review with a review of actual mental health difficulties that highly intelligent people may have to deal with if they do indeed become socially isolated due to the effect of low likeableness.

Factors That May Relate to Low Likeableness

Lack of Time

Burt, Lewis, Beverly, and Patel (2010) found that graduate students who were in pursuit of their advanced degree perceived their education obligations as being a major factor in their lack of socialization opportunities. Lack of time for interpersonal interactions may not only restrict possibilities for friendship, but also may restrict the opportunities for the practice of social skills. Most individual's social skills can get rusty without use. While friendships are often considered as requiring only an unconscious effort, social relationships actually require thought and work, and any skill becomes can become degraded with lack of use.

Communication Problems

Ease of communication is often associated with friendship, so not being able to communicate coherently could cause problems in forming friends. As a first impression, lack of communicating properly would suggest a lower likableness. Arbuckle, Pushkar, Bourgeois, and Bonneville (2004) found that individuals who could not stay on topic had strong difficulties finding friends. Changing tangents, often before points are made, can cause listeners to disengage from the speaker. This would make finding potential listeners hard to find and, without potential listeners, one would be hard pressed to form friendships. This behavior is labeled as off-target verbosity (OTV). This is more common

in later stages of life. People displaying OTV would dominate conversations regardless of the interest level of the listener, and the lower listener interest due to an inability to join in the conversation can tend to block the establishing of friendships.

Another problem might occur if the communicator stays too narrowly focused on one subject and goes into minute details regarding it. This also falls under the OTV umbrella, as overly detailed elaborations can eliminate listeners who might have been possible friends. Highly intelligent individuals have a tendency to become experts in their fields and their ability to explain can befuddle the normal person, which could lead to a lower likableness.

Self-imposed Isolation

Burt, Lewis, Beverly, and Patel (2010) recorded comments from highly educated individuals that included, “only wanting to see others that were highly educated”, “not interested in people with less education”, “having very high standards in friends”, “overall being picky and intimidating others with their intelligence”. The fact that people of high intelligence often seem to want to associate only with those similar to themselves may lend credence to the perception that they are socially inept. Or as mentioned earlier, maybe only geeks can deal with geeks.

Self-esteem

The desire to socialize may become stunted in highly intelligent people. Hills, Argyle, and Reeves (2000) found that believing one is good at something is an important motivator in actually doing it. Social situations that can be considered a failure may provide motivation for avoiding additional socializing. The loss of socializing interest

could start a downward spiral of abilities as each feeds into the other. There is a negative correlation between social interest and abilities (Ackerman & Heggestad, 1997). As their limited social interactions are often with others as socially limited as themselves, social learning may not happen without appropriate role models with better social skills.

Beyer and Bowden (1997) found that individuals with lower expectancies but otherwise identical performances had lower self-evaluations. In this way, self-concept can affect the actual feeling of accomplishment after the performance. Clark and Dixon (1997) had a gifted participant who said that when he discovered how he was perceived unfavorably by others, it hurt his image of himself. His self-confidence and self-esteem was impacted. The study goes on to describe him as appearing insecure in social situations, leading to a self-fulfilling prophecy.

Asperger's Disorder

In the extreme, high intelligence and diminished social skills can become linked as a mental disorder. The American Psychiatric Association (2000) lists Asperger's disorder as a marked impairment of multiple non-verbal behaviors, failure to develop peer relationships, lack of spontaneous seeking to share enjoyment, and a lack of social emotional reciprocity. A person with this disorder also can have an interest that is abnormal in intensity or focus, allowing them to amass a great deal of facts and information about a single topic. Once identified as an actual disorder, public opinion can over-generalize this to a miss-perception that high intelligence is always linked to lack of social skills.

Public Perceptions

One problem with the perception of high intelligence and low social skills by the general public is the fact that it may be creating a self-fulfilling prophecy on the part of the public. When interacting with a highly intelligent individual, the social skills of this individual may be perceived as negative no matter what the individual does. Mindset is a pertinent factor in what is actually perceived (Oyserman, Sorenson, Reber, & Chen, 2009). The distinction between perception and reality is a blurred line at best. Myers (2007) states:

With remarkable ease, we form and sustain false beliefs. Led by our preconceptions, over confident, persuaded by vivid anecdotes, perceiving correlations and control even where none may exist, we construct our social beliefs and then influence others to confirm them. (p.86)

The distinction of whether highly intelligent people are socially awkward or just perceived that way may be a moot point, if highly intelligent individuals are destined to be perceived as social pariahs regardless of their performance during the social situation.

First Impressions of High Intelligence

Smith and Collins (2009) found that first impressions of others are tools used in social life, where the validity of the impressions are inconsequential. If the first impression is bad, the individual will probably try to avoid further contact with the new acquaintance, leading to a lower likeableness.

Non-verbal Cues

Labels can affect the perception of an individual. Some school students are labeled as gifted, which implies high intelligence. Luftig and Nichols (1990) found that gifted students reported that being labeled as smart made it difficult to be friends with non-gifted students. Apparently, even when information is limited to a mere label that describes only a small part of a person's personality, judgment may be limited to generalizations and stereotypes associated with the label.

Even without labels, the public finds other ways to perceive the intelligence of strangers. Murphy, Hall, and Lebeau (2001) found many nonverbal cues in perceiving intelligence. Frequency of smiling, eye contact, and "talking with their hands" were all associated with being more intelligent, but fidgeting was associated with being less intelligent.

A study by Murphy (2007) used both control participants and actors to be judged on their intelligence. The actors were trying to use both verbal and nonverbal cues to give an impression of intelligence. Some judgments on intelligence were made solely on transcriptions. With transcriptions only, the ability to accurately judge intelligence was greatly reduced.

Verbal Cues

Murphy, Hall, and Lebeau (2001) also found many verbal factors that people used to judge intelligence. The rapid speed of delivery, speaking with clarity, the quality of voice, and fluency were all associated with the perception of the higher intelligence, while more pauses or difficulty pronouncing words were associated with lower

intelligence. A connection between a strong vocabulary and intelligence has a long history of research. Bonner and Beldon (1970) found correlations between vocabulary and intelligence in the Midwest and on a multicultural basis.

Bailey, Digiacomo, and Zinsen (1976) found that perceiving similar intelligence was a reliable factor in long-lasting friendships. When an individual used words that were perceived as the vocabulary of a highly intelligent individual, this word choice would negatively impact their likability rating unless the person witnessing the speech also perceived themselves as highly intelligent. This may be another explanation why “only geeks can deal with geeks.”

In contrast, something that is never seen as contributing to likeability is a condescending attitude towards others. While tone is an important part of condescension, the specific words themselves or even the number of words used (Murphy 2007) can also produce this effect. A related problem is that excessive use of numbers and equations in communication may repel some individuals, as math can be an intimidating topic for many people.

Gender as a Possible Factor in the Perception of Intelligence

Reis (2003) states that it is the socialization and stereotypic experiences that affect bright girls. This happens during their formative years causing a decrease in their abilities to reach their potential in life. The far smaller number of patents given to women is one of their examples used to show the unrealized potential of our female population. Another is the lack of women in general in math and science.

Joyce and Farenga (2000) found that boys are favored by the socialization process to enter the science fields. The selection of science courses by students had more to do with gender than with academic ability. Oswald (2008) found that females talk below their educational level. In an effort to socialize better, they lower their apparent intelligence and education. This implies that there is a social penalty for women if they are perceived as highly educated. Luscombe and Riley (2001) found that women underachieve to fit in socially, but that women include their social interactions in determining their quality of achievements. Their study finds that female gifted students disappear the longer they are within the educational system but that males have a higher self-concept than females. Furnham and Buchanan (2005) found that males predicted they would score higher on IQ assessments than females, and that gender had more to do with the variance in predictions than any other personality variable.

Beyond First Impressions

In contrast to negative first impressions, Luftig and Nichols (1990) suggest that intelligent people do not necessarily have social deficits compared to others. They found that gifted students included a smaller percentage of those being rejected by others than non-gifted students. The social skills of the gifted students were equivalent to or better than that of the non-gifted students. Their study had gifted students that were immersed most of the time with other students, who did not reject them. While the initial impression may have been that the gifted students were socially inept, long term exposure altered the initial perception with the reality of experience. Cornell (1990) reinforced this longer acquaintance philosophy, showing that gifted students surrounded by non-gifted

students on an everyday basis were accepted and not rejected on a higher basis than non-gifted students. Perceptions match reality the more deeply two individuals are acquainted (Levesque, 1997).

The highly intelligent individual seems to function well in this forced immersion with others, such as at school or work. Albert and Brigante (1962) found that making friends comes down to two types of choices, free (independent) and forced (office friendships). A powerful predictor of whether any two people will be friends is sheer proximity (Meyers 2007). While it can cause hostility, proximity kindles liking between individuals far more often.

The Mental Health Impact

Having friends is an important part of everyday life. The need for companionship extends to all cultures, genders, and ages. One rarely finds a person that travels through life without having or making claims to having friends. There is a need for interested, reliable friends for the individual to lead a plausible, meaningful, and tolerable life (Albert and Brigante 1962). The process to accomplish this can have many levels of success and failure depending on desire and need.

The highly intelligent person may end up living a lonely existence. An individual that is perceived as having a deficient social ability may become isolated and lonely. Lawhorn and Lawhorn (2000) list the physical, social, and psychological consequences of loneliness. The physical includes premature death, lower survival rate from heart attacks, diminished immunity functions, and an overall increase in health problems. The social consequences are greater degree of unhappiness and fewer positive emotional

experiences. The psychological repercussions are emotional distress and an increase in likelihood of mental illnesses.

In a meta-analytic review, Segrin (1990) found that other people rated depressed subjects as possessing less social skills. The study also found that the depressed individuals rated their own social skills as lower than others that were not depressed. This could lead to a vicious cycle. The perception of intelligence can give way to a perception of poor social skills, which may lead to a person that is rejected and lonely, and loneliness often leads to depression.

The ability to make friends stays important at all ages, starting early in life and extending to the elderly. Lawhon and Lawhon (2000) found that loneliness in later life was associated with negative physical, social, and psychological consequences. Cacioppo and Hawkley (2009) found in the elderly that loneliness was associated with greater cognitive declines in most areas. Without the ability to make friends at an older age when one's own similarly-aged friends are passing away can lower their quality of life. At the other end of the spectrum, young adults that were lonely had poorer abilities to regulate attention, causing problems in the quality of their own functioning. The social world of the lonely individual at any age is viewed as a threatening and a punitive environment. Once set, this view can lead to inhibiting the further effort to make friends.

Making new friends can increase the length of an individual's life compared to being lonely. Patterson and Veenstra (2010) found that across all reasons for mortality, the odds of dying were about 40% higher among people who report often being lonely compared to those that never feel lonely. The odds were even greater for the lonely when

it came to health issues such as stroke and cardiac arrest. This study suggested that loneliness was an important overall health risk for all ages, which means that social ability becomes an important factor in a person's overall health as well as psychological health.

Not having the communication skills to make friends can be a risk factor for the development of psychosocial problems. Segrin and Flora (2000) state:

The result of this study show that people's communication skills play an important role in determining how they will react to major life transitions and stressful events that often accompany such transitions. On their own, these skills are negatively predictive of changes in depression, loneliness, and social anxiety over time. That is to say, people with good communication skills today are unlikely to be depressed, lonely, or socially anxious tomorrow, compared to those with poor skills. (p. 509).

Having communication-based social skills not only protects the individual from the present danger of depression, anxiousness, and loneliness, it also protects the individual from these issues during the stressful times that happen throughout life.

The issue of loneliness and isolation can strike early in life. Lawhon and Lawhon (2002) found that not all children attract and maintain relationships. Not having friends makes the child feel rejected, and being regularly excluded and rejected damages the chances for future relationships and lowers the self-esteem of the child. Bowker et al. (2010) found that the child who was friendless was more victimized. This same child was found to be less pro-social than the child who had one or more best friends. The students

who are unpopular at school also have a lower social self-concept of themselves (Cornell, 1990). If the child with a low self-concept and low self-esteem grows up to be an adult with low self-efficacy, his future career may be affected. A low self-efficacy predicted a low work related performance (Judge, Shaw, Jackson, Scott, and Rich, 2007). A young age is when most conceptualizations are developed, and being better able to establish why and how could perhaps help in preventing these children from forming these associations in the first place and subsequently avoiding the harsh consequences of becoming a lonely victimized child and, later, adult.

Definitions of the Variables

The first independent variable is vocabulary use. Descriptive paragraphs were written at either a 14th or 9th grade level as defined by the Flesh-Kincaid system installed in Window 97.

A second independent variable is gender. The descriptive paragraphs were attributed to either a woman or man.

The dependent variable is the perceived likeableness of the author of the paragraph. This presumably would be based on a first impression that the reader formed by reading the written paragraph. Likableness was measured as a combination of how willing the reader would be to be friends with the author of the paragraph, how similar the author appears to be to present friends of the reader, and how many friends the reader thinks the author of the paragraph will be able to attract.

Statement of the Problem

Research suggests that first impressions are very important in making friends and that, for many reasons, highly intelligent people may often make poor first impressions to others. This may cause them to lose confidence, not develop appropriate social skills, and to become even more isolated as a result. This study will examine whether people prejudge highly intelligent individuals as not being good prospects for forming friendships.

Hypotheses

Hypothesis 1

Individuals perceived to be of higher than normal intelligence will be considered to be less likeable than those perceived to be of lower intelligence (closer to normal).

Hypothesis 2

The effect of Hypothesis 1 will be stronger for those assumed to be women than for those assumed to be men.

METHOD

Participants

Participants consisted of 105 undergraduate and graduate students attending a small Midwestern university. The demographic specifics are shown in Table 1.

Participants were predominately Caucasian, twice as likely to be female than male, and fairly evenly balanced between the different college years. Ages ranged from 18 to 54 ($M = 23.54$, $SD = 7.28$).

Table 1. Summary of Demographic Data.

Participant Type	Frequency	Percent
Female	70	66.7
Male	35	33.3
College Freshman	17	16.2
College Sophomore	21	20.0
College Junior	25	23.6
College Senior	19	18.1
Graduate Student	23	21.9
Black/African American	5	4.8
Caucasian	95	90.5
Hispanic	3	2.9
Other/Multi-Racial	1	1.0
Declined to Respond	1	1.0

Procedure

The study was made available online. Data were collected over approximately a month. Participants were recruited in two different ways: (a) from general psychology classes with the student receiving required research credit and (b) from the general student population at the same university. The automated study included reading and acknowledging the informed consent, completing a short demographic data form, then reading the paragraph and completing a short questionnaire for each of the four potential friend information paragraphs, and then closing with a debriefing statement. The informed consent is shown in Appendix B, data form in Appendix C, full set of eight potential friend information paragraphs in Appendix D, paragraph questionnaire in Appendix E, and debriefing statement in Appendix F.

The overall design was a 2 x 2 factorial with likeableness as the dependent variable and paragraph author intelligence level (via language use) and author gender as the two independent variables. Two versions of each paragraph were prepared, one using language that would be considered at the 9th grade reading level, and the other at the 14th grade. Language level was determined using the Flesh-Kincaid system installed in Window 97. The eight paragraphs are contained in Appendix D. Research participants read only one version of each paragraph. They read two of the higher intelligence paragraphs and two of the lower intelligence paragraphs, with the author gender split at each intelligence level into one female and one male. The four conditions were presented so as to be counterbalanced across all of the participants.

Materials

Informed Consent

The welcoming statement and informed consent are contained in Appendices A and B. Research participants had to indicate an acknowledgement of reading and understanding the informed consent before they could continue onto the study. Participants wanting a summary of results were able to provide an e-mail address so that the researcher could e-mail them a summary once the study was complete.

Demographic Data Form

This demographic data form is contained in Appendix C, and was used to collect participant age and gender.

Friend Information Paragraph

The eight possible potential friend information paragraphs are shown in Appendix D, along with the instructions to the participants. The paragraphs were described as written by anonymous authors to a website that connects people in non-romantic friendships. The higher intelligence version of each paragraph was written at the 14th grade level, according to the Flesh-Kincaid criteria. For the purpose of this study, they also included the use of precision orientated descriptions, the use of numbers, and more words than the second version of each paragraph. The alternate versions were written at the 9th grade level, had more general descriptions, did not use numbers, and used less words than the first version. The author gender of each paragraph alternated from male to female. The four paragraph topics were: Instruct a novice how to fix scrambled eggs,

describe the conditions for a perfect walk, describing themselves to the world, and describe watching the stars and the necessary equipment.

Questionnaire

After each paragraph would appear a short questionnaire with six questions, contained in Appendix E. The questions asked for an impression of the author of the paragraph and the author's ability to attract friends. All questions were on a Likert-like seven-point scale except for a last open-ended question. Each scale point had a specific description listed underneath.

The questions asked how intelligent did the author of the paragraph appear to be, how much you would like to have this person as a friend, how similar the author appears to be to your own friends, and how many responses for friends do you think the author of the paragraph would get. Question three, "How similar to your current friends is the person that wrote this paragraph?" answers were reversed. This was the middle question. It was done to make sure that the participants were paying attention to the answer choices. The last question was open-ended asking the research participant to describe the author of the paragraph as best as they could from the paragraph he or she had written.

Debriefing Statement

The debriefing statement is contained in Appendix F. The statement explained the hypothesis, the purpose of the study, and who to contact if the study had inadvertently caused the research participant any distress.

RESULTS

Hypothesis Tests

Hypothesis 1

As shown in Table 2, overall results on the three likeableness questions were in agreement with the first hypothesis, with the 9th grade level paragraph author being rated more likeable than the 14th grade level paragraph author on each question. An ANOVA was run for each question. For the question, “How willing are you to become friends with the person that wrote this paragraph?”, the difference of .42 in mean ratings was statistically significant, $F(1,418) = 12.16, p = .001$. On the second question, “How similar to your current friends is the person that wrote this paragraph?”, the difference of .92 was statistically significant: $F(1,418) = 42.44, p = .000$. On the third question, “How many responses for friends do you think the person that wrote this paragraph will receive?”, the difference of .56 was statistically significant: $F(1,417) = 20.84, p = .000$. The results for these three questions were combined into a single overall likeableness measure, with the mean ratings also shown in table 2. The difference of .63 on the combined measure was statistically significant: $F(1,418) = 36.00, p = .000$.

Table 2. Questionnaire Data by Paragraph Version (on a 1 to 7 Likert-like scale).

Question	Paragraph Version	Mean	Standard Deviation
How intelligent is the person that wrote this paragraph?	9 th grade	4.20	1.04
	14 th grade	5.22	1.24
How willing are you to become friends with the person that wrote this paragraph?	9 th grade	4.56	1.19
	14 th grade	4.14	1.25
How similar to your current friends is the person that wrote this paragraph?	9 th grade	4.35	1.40
	14 th grade	3.43	1.49
How many responses for friends do you think the person that wrote this paragraph will receive?	9 th grade	4.16	1.25
	14 th grade	3.60	1.24
Likeableness, combined	9 th grade	4.36	1.08
	14 th grade	3.73	1.07

Hypothesis 2

Paragraph author gender had little effect on the results. The mean ratings on the "How intelligent is the person that wrote this paragraph?" question and the combined likeableness measure are shown in Table 3. None of the differences by gender nor the interaction of gender and paragraph version were statistically significant.

Table 3. Questionnaire Data by Paragraph Version and Gender (on a 1 to 7 Likert-like scale).

Question	Paragraph Version	Paragraph Gender	Mean	Standard Deviation
How intelligent is the person that wrote this paragraph?	9 th grade	Female	4.28	1.08
		Male	4.11	.98
	14 th grade	Female	5.11	1.34
		Male	5.30	1.16
Likeableness, combined	9 th grade	Female	4.39	1.10
		Male	4.32	1.06
	14 th grade	Female	3.65	1.11
		Male	3.79	1.04

Consistency Checks

Mean ratings on the “How intelligent is the person that wrote this paragraph?” question are shown in Table 2. The 14th grade level paragraph author was rated more intelligent than the 9th grade level paragraph author, and an ANOVA indicated that the difference of 1.02 was statistically significant: $F(1,417) = 81.77, p = .000$.

Correlations were run to determine how the three questions that made up the combined likeableness measure were related to each other. All three were positively correlated with each other, with $r(420)$ between .50 and .58 and $p = .000$ for all three.

The mean ratings shown in Table 2 for the 9th grade level paragraphs were all very close to 4, middle of the 7-point Likert-like scale. This likely indicates that the participants considered themselves and their friends to be closer to the 9th grade level in terms of intelligence and likeableness than the 14th grade level.

The last question asked about each paragraph was the open-ended “Please describe in your own words the person that wrote this paragraph.” For the 9th grade level paragraphs, there were a total of 149 responses. Of these, some form of the word average was used to describe the author of the paragraph 24 times; fun or nice, 11 times; dumb or not intelligent, 4 times; and bad writing or grammar, 9 times. For the 14th grade level paragraphs, there were a total of 152 responses. Of these, some form of the word intelligent was used to describe the author of the paragraph 38 times; large vocabulary, 30 times; trying to sound intelligent, 15 times; and bad writing or grammar, 8 times.

DISCUSSION

The results are consistent with the first hypothesis, suggesting that people with perceived higher intelligence are considered less likeable. The participants were rating authors of the paragraphs without any prior knowledge or acquaintance with them, making it analogous to a first impression. While some studies show that this first impression may go away with more personal interaction, first impressions may still present a rather high barrier in the way of making a new friend. With a bad first impression, the person perceived as highly intelligent may not get a chance to make a second impression.

The likeableness rating was a combination of questions two, three, and four. Responses on these three questions were relatively well correlated with each other (r between .5 and .6), which suggests that they were measuring the same factor.

The overall study results suggest that there may be a real social penalty paid for anyone with the appearance of a higher than normal intelligence. A very intelligent student once expressed this to me by saying that if the most intelligent person were as popular as the starting quarterback, students would increase their motivation to do well in their education ten-fold. What may be happening here instead is a socially driven motivation not to be intelligent or to at least not to appear to be intelligent.

The results from the 9th and 14th grade levels on the first question, asking about the intelligence of the author of the paragraph, suggests that the higher the apparent grade level, the higher the apparent intelligence of the author. As the paragraph pairs were

exactly the same except for word usage, without voice qualities or video pictures, this implies that vocabulary alone can make a difference in the appearance of intelligence.

The second hypothesis, “The effect of Hypothesis 1 will be stronger for those assumed to be women than for those assumed to be men” was not supported. While the mean ratings for all three likeableness questions were slightly lower for females than males on the 14th grade level paragraphs and the mean ratings for two of the three likeableness questions were higher for females than males on the 9th grade level paragraphs, none of the differences were large enough to be considered even close to statistical significant.

Limitations of Study

The ethnicity distribution of participants was not the national average, suggesting the possibility of regionally localized results. Participants were all college students and may not be a true random sample of people in general. The gender of the paragraph author was described by only two words, female or male. If there had been an actual woman or man visually voicing the paragraphs there may have been different results on hypothesis two. The results here suggests that words alone can cause the perception of intelligence but that gender effects may require a more direct perceptual interaction.

Another important limitation was the number of participants. If this study were to be run again, the number of participants should be at least 400. With four times as many participants, hypothesis two would have a better chance of producing significant results. This also would have allowed a better analysis taking into account possible interactions

between the gender of the participant and the gender of the paragraph authors. Further research on this topic should also strive to be more balanced participant gender.

As this study only involved first impressions, it would be interesting to follow how people's impressions may change with actual continuing interactions with intelligent people. This would have to be done in field studies where participants would work with or be at school with highly intelligent people, and would be asked to periodically rate their impressions of the likeableness of their co-workers or classmates. It is expected that more stereotypical first impressions would usually be replaced by more realistic perceptions.

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APPENDIX A

Welcoming Statement and Instructions

Instructions

These individuals are interested in obtaining new non-romantic friendships. Instead of just talking about themselves, each was assigned a writing task from one of four options.

1. Describe the conditions for a perfect walk. They were limited to only five sentences..
2. Describe preparing scrambled eggs to someone who had never prepared a meal before. They were limited to only five sentences.
3. Describe watching the stars and the tools needed to accomplish this. They were limited to only four sentences.
4. Describe yourself to the world. They were limited to only four sentences.

You will be viewing paragraphs for four different individuals, one from each of the four options. Writers were instructed only to list their gender with the paragraph. Please fill out the questionnaire after each paragraph with no consideration of what you may have read in the other paragraphs.

APPENDIX B

Informed Consent

CONSENT TO PARTICIPATE IN RESEARCH

Department of Psychology, Fort Hays State University

Study title: The Social Perceptions of the Highly Intelligent

Name of Researcher: Robert J. Fossum

Contact Information: 785-769-4333, bobfossum@yahoo.com

Name of Faculty Supervisor & Contact Information, if student research:

Dr. Stephen Kitzis, 785-628-4404, skitzis@fhsu.edu

You are being asked to participate in a research study. It is your choice whether or not to participate.

Your decision on whether or not to participate will have no effect on benefits, services, academic standing, job status, or anything else to which you are otherwise entitled.

What is the purpose of this study ?

Shows such as The Big Bang Theory are very popular and watched by millions. This study looks at how the perception of intelligence may affect the likeableness of an individual.

What does this study involve ?

This online study includes reading an informed consent, completing a short demographic data form, reading four hypothetical friend information paragraphs, answering a five-question questionnaire on each of the four paragraphs, and then reading a debriefing statement. The informed consent and debriefing statements will be available to print out if you desire. After completion of the study, a certificate will be available to print out to show completion of participation in a research project.

You will be provided four different paragraphs as if they were written by a person interested in finding a friend through a friend-finding website. After each paragraph, you will be asked five questions regarding how intelligent they appear to be and how successful you think they will be in finding friends. None of the procedures or questionnaires used in this study are experimental in nature. The only experimental aspect of this study is the gathering of information for analysis.

This study and its data is maintained at an online site called Survey Gizmo. This is a very secure site, using various advanced encryption and other security techniques. You can read about the site's security procedures at their website (<http://www.surveygizmo.com/security/>).

If you decide to participate in this research study, you will be asked to indicate your understanding and acceptance of this consent form after you have read and understand what will happen to you. The length of time of your participation in this study will be about 15 minutes. Approximately 100 participants will be in this study.

Are there any benefits from participating in this study ?

There will be no benefits to you should you decide to participate in this study. Your participation may provide a small contribution to the field of social psychology in terms of how the perception of intelligence may affect likeableness.

Will you be paid or receive anything to participate in this study ?

No, you will not receive any monetary compensation for doing this study. However, you will receive research credit or extra credit if your class instructor allows it. You will not receive any compensation if the results of this research are used towards the development of a commercially available product.

What are the risks involved with being enrolled in this study ?

It is unlikely that participation in this project will result in harm to participants. Sometimes talking about these subjects can cause people to be upset. You do not have to talk about any subjects you do not want to talk about, and you may stop participating at any time. If you feel distressed or become upset by participating, please contact the *Kelly Center*, 785-628-4401.

How will your privacy be protected?

Efforts will be made to protect the identities of the participants and the confidentiality of the research data used in this study. At no point will you be asked to provide your name, and only summary results of data collected will be reported. Data will be saved only until the study ends and will be destroyed at that time. Access to all data will be limited to the researcher and faculty advisor.

The information collected for this study will be used only for the purposes of conducting this study. What we find from this study may be presented at

meetings or published in papers but your name will not ever be used in these presentations or papers.

Other important items you should know:

- **Withdrawal from the study:** You may choose to stop your participation in this study at any time. Your decision to stop your participation will have no effect on your receiving class credit.
- **Funding:** There is no outside funding for this research project.

Whom should you call with questions about this study ?

If you have questions, concerns, or suggestions about human research at FHSU or specific questions about this particular study, you may call the Office of Scholarship and Sponsored Projects at FHSU (785) 628-4349 during normal business hours. You may also contact Dr. Janett Naylor, Chair of the Psychology Department Ethics Committee, 785-628-5857, jmnaylor@fhsu.edu.

CONSENT

I have read the above information about *The Social Perceptions of the Highly Intelligent*. By marking the box below, I agree to participate in this study and I have been given the opportunity to print a copy of this signed consent document for my own records. I understand that I can change my mind and withdraw my consent at any time. By marking the box below on this consent form I understand that I am not giving up any legal rights. I am 18 years or older.

APPENDIX C

Demographic Data Form

Data Form

Sex: M F

AGE: _____

Year of Education:	Freshman	Sophomore	Junior	Senior	Graduate Student
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Ethnicity:	Caucasian	Hispanic	African American	Native American
	Other			

If Other: _____

APPENDIX D

Potential Friend Information Paragraphs

1A**Instruct a novice on how to fix scrambled eggs.**

Remove several eggs from the refrigerator and crack them into a bowl, tossing the shells. Pour eggs into frying pan, placing onto burner. Align burner dial slightly above medium temperature, adding American cheese according to preference. Using spatula, stir eggs often until they are no longer liquid. Turn off heat and serve onto plates.

1B**Instruct a novice on how to fix scrambled eggs.**

Remove multiple eggs from the refrigerator, cracking them into an appropriate container, and discard the eggshells down the garbage disposal. Pour egg liquid into a frying pan, positioning it on the center of a burner. Adjust the stovetop burner to slightly exceeding medium temperature; introduce shredded American, Monterey Jack, or Provolone cheese at this occasion according to preference. With a spatula, stir the egg mixture often until they solidify. Terminate cooking process, depositing the cuisine onto appropriate dinnerware.

2A**Describe the conditions for a perfect walk.**

A perfect walk has a length that doesn't exhaust people, giving the individual necessary exercise. Non-paved surfaces add pleasure and decrease any negative effects of

the walk. A pleasant day with sunshine would add pleasure. Having pleasant company would also increase enjoyment from this activity. Beautiful views, such as snowcapped mountains or the ocean shore, would enhance the pleasure even more.

2B

Describe the conditions for a perfect walk.

The distance for the picture-perfect walk would not fatigue individuals, giving strollers essential cardiovascular exercise. Non-paved surfaces, that give support without jarring the feet, would add to the satisfaction and decrease any possible negative effects of the walk. Pleasant exterior conditions with the sun shining would add to the gratification of the walk. Having some company would also increase gratification from this activity. Beautiful panoramas, incorporating snowcapped mountains or ocean shoreline, would augment gratification to an even larger extent.

3A

Describe yourself to the world.

I consider myself a friendly person that likes to spend time around other people, although alone time is also sometimes enjoyable. I like being in exciting situations and visiting exotic locations. Being around humorous people that make me laugh brings great pleasure. I also cause others to laugh with my own humor.

3B**Describe yourself to the world.**

I am a sociable individual who enjoys being in the vicinity of people yet I enjoy quiet tranquility at other moments. I have exuberance for exciting situations and exhilarating geographical regions. I have a desire to express amusement by laughing while in the vicinity of humorous individuals. Upon occasion, I am also capable of providing amusement with my sarcasm and irony.

4A**Describe watching the stars and necessary equipment.**

Since the existence of humankind, men have gazed in wonder at the stars. Often stars are viewed using the naked eye. Powerful telescopes are now available increasing the ability to observe these stars. The reason some stars appear very bright is their possible closeness and incredible hot temperatures.

4B**Describe watching the stars and necessary equipment.**

The correct nomenclature for examining stars is astronomy. The stellar scintillations intrigue numerous individuals. Observations may be rendered with the naked eye but a professional telescope like the Mead 16" Lightbridge truss-tube

Dobsonian reflector telescope would increase identifications. The brightest stars are type O having surface temperatures as high as 35,000 K.

APPENDIX E

Paragraph Questionnaire

Paragraph Questionnaire

Please choose the best matching answer for each question.

How intelligent is the person that wrote this paragraph?

- | | | | | | | |
|-----------------|--------------------------|------------------------------|---------|------------------------------|--------------------------|--------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Like a
brick | Well
below
average | Slightly
below
average | Average | Slightly
above
average | Well
above
average | Genius |

How willing are you to become friends with the person that wrote this paragraph?

- | | | | | | | |
|-------------------|------------------|------------|---------|----------|-------------------------|--------------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Absolutely
not | Very
unlikely | Not really | Neutral | Somewhat | I want to
be friends | My future
best friend |

How similar to your current friends is the person that wrote this paragraph?

- | | | | | | | |
|--------------------|-------|-------------------|---------|-----------------------|--------------------------|--------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Identical
twins | Close | Somewhat
close | Neutral | Somewhat
different | Quite a bit
different | Exact
opposites |

How many responses for friends do you think the person that wrote this paragraph will receive?

- | | | | | | | |
|--------------------|----------|----------------------------------|---------------------|----------------------------------|------|-----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Absolutely
none | Very few | Slightly
less than
average | Their fair
share | Slightly
more than
average | Many | Countless |

Please describe in your own words the person that wrote this paragraph.

APPENDIX F
Debriefing Statement

DEBRIEFING STATEMENT

The purpose of this research is to determine whether people associate apparent higher intelligence with an expectation of lower likeableness, and whether this association differs with gender.

There were four different topic paragraphs, with two versions of each. One version was written with more words and at a 14th grade level according to the Flesh-Kincaid system used on Word 97. The other version was written with fewer words and at a 9th grade level. Each paragraph was presented to the different research participants (like yourself) as if it had been written by either a male or female author, and author gender alternated between participants for every paragraph.

The idea behind this thesis was that higher-grade word usage and the use of more words would make that person appear to be more intelligent, and that apparent higher intelligence would be associated (correlated) with a lower perception of likeableness. It was also thought that this negative trend between apparent intelligence and likeableness would be stronger for women than men.

This study was dealing with opinions and no one should feel that their answers were wrong. If you are feeling personal discomfort as a result of doing this study for any reason, please contact a professional at the Kelly Center on campus (phone number 1-785-628-4401).

Thank you very much for your participation in this study. The next screen will give you an opportunity to print a certificate for completing this study.