

Examining Personality Factors in Deception Detection Ability

Samuel D. Spencer¹
Minnesota State University, Mankato

ABSTRACT. Although meta-analysis has revealed that individual differences in deception detection ability do exist, the relationship between personality traits and deception detection ability has not been as heavily researched (Aamodt & Custer, 2006). The Big Five model of personality is often used to investigate personality differences in deception detection ability (Elaad & Reizer, 2015; John & Srivastava, 1999). Elaad, Reizer, and Hirschberg (2006) found significant relationships between deception detection and openness to experience, agreeableness, and extraversion, respectively. The current study predicted that high levels of openness to experience, agreeableness, and extraversion would correlate with accuracy in a video clip deception detection task. The study was administered to 228 undergraduate students from a midwestern university, and yielded no significant correlations between overall accuracy on the deception detection task and openness to experience ($r = .05$, $p = .47$), agreeableness ($r = .01$, $p = .87$), or extraversion ($r = .01$, $p = .85$). An independent-sample t test revealed that participants exhibited a significant truth bias, $t(220) = 5.66$, $p < .001$, $d = .54$. The concept of truth bias is explored through Levine's (2014) Truth Default Theory. Explanations for the lack of significant findings and other methodological issues are also addressed. Due to the complex nature of deception, further inquiries could investigate different types of deception detection tasks. Future research could also explore differences in attitudes and beliefs related to deception in general among college students because personality traits may not serve as a reliable predictor of deception detection ability.

Because deception detection skills are highly valued and critical for many careers, especially those relating to law enforcement and corrections (Wang, Chen, & Atabakhsh, 2004), the field of psychology has contributed a great deal of research into attempting to identify individual differences in deception detection ability (Aamodt & Custer, 2006; Bond & DePaulo, 2008). Although meta-analysis examining individual differences in deception detection has not identified many definitive predictors of accurate deception detection ability (Aamodt & Custer, 2006), that is not to say that individual differences in deception

¹Emily Stark is the faculty mentor.

detection do not exist.

For example, Albrechtsen, Meissner, and Susa (2009) discovered that people who only watched a small portion (thin slice) of a video clip, and presumably had to rely on their intuition to make veracity judgments, were more accurate at detecting deception than their counterparts who made veracity judgments after watching the entire video clip. Aamodt and Custer's (2006) research indicated that the personality trait self-monitoring may be an individual difference influencing deception detection. The keen ability of self-monitors to observe the world around them and the behaviors of others may make them more adept at detecting deception.

These are but a few examples of the many individual differences that have been proposed to impact deception detection ability. However, the research examining personality traits as they relate to deception detection ability is limited (Aamodt & Custer, 2006), which indicates that more research on this topic is needed to identify potential attributes of an effective lie detector. The present study chose to focus on Big Five personality traits as a differentiator of deception detection ability because several of the Big Five traits, such as extraversion and agreeableness focus on how an individual interacts with others, which may impact that individual's deception detection ability. The Big Five taxonomy also appears to be the most commonly used taxonomy in the few studies that have explored the relationship between deception detection and personality (Elaad & Reizer, 2015; Hirschberg et al., 2006). Although limited in number and significant findings, these previous studies allow for guidance in hypothesis development and lend credence to the use of the Big Five taxonomy in deception detection research.

The Big Five Model of Personality

Throughout the latter half of the 20th century, there has been an increasing amount of research conceptualizing, describing, and measuring personality traits (John, Naumann, & Soto, 2008; McCrae & Costa, 2004). However, the plethora of different theories that have arisen has led to some confusion and disagreement in regard to which conceptualization best encapsulates personality (John et al., 2008). To clarify the many different approaches to personality, researchers have used factor analysis and other lexical approaches to search for independent, overarching categories to simplify the conceptualization of personality (Cattell, 1945; Tupes & Christal, 1961). As more results were validated over the years, factor analysis continued to point in the direction of a conclusion that most of the words used to describe personality fall into five distinct categories.

These groups are collectively referred to as the Big Five taxonomy, with the traits of openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism all existing on a continuum and being measured by participant self-report surveys. For example, an individual scoring high in extraversion may exhibit an increased amount of social status in leadership positions, and an individual scoring lower in this trait may have poorer quality of relationships and speak up less

in conversation. However, most individuals will fall somewhere in the middle of these continuums (John et al., 2008). Through the proliferation and validation of the Big Five model, research on personality traits and the predictions that can be inferred from their accurate measurement has continued to improve.

To further elucidate the Big Five model of personality, a brief description of the traits is warranted. Openness to experience involves discovering novel activities and approaches to problems, and is often described as an association with learning new things. John et al. (2008) conceptualized openness to experience as “describing the breath and complexity of an individual's mental and experiential life” (p.120). The consensus regarding the description of openness to experience is that people with high levels of this trait tend to exhibit intellectual curiosity and the desire to pursue novelty and variety (McCrae & Costa, 1997).

Some of the traits that have been shown to comprise extraversion include talkativeness, enthusiasm, assertiveness, and energetic behavior (John et al., 2008). McCrae and Costa (1997) posited that people who exhibit high levels of agreeableness tend to be trusting of other people, and are usually very sympathetic and attuned to the thoughts, feelings, and actions of others. Neuroticism is generally associated with negative emotions such as anxiety, low self-confidence, irritability, and worrying. Individuals who score high in conscientiousness tend to be efficient, organized, thorough, and deliberate, and often pride themselves in adherence to societal norms and rules (John & Srivasta, 1999; McCrae & John, 1992).

One of the most important benefits of the Big Five taxonomy is that it allows access to an empirical method of quantifying personality differences among individuals with relative ease (John et al., 2008; McCrae & John, 1992). This ease of use, combined with the excellent construct validity the Big Five taxonomy has been shown to exhibit, lends credence to the use of this measure, which can usually be administered in less than 15 minutes (John et al., 2008). As more data continues to be collected from Big Five surveys, the collection of reliability and validity evidence supporting these measures will continue to grow.

Although accuracy rates of deception detection ability have typically been shown to be no greater than chance (Aamodt & Custer, 2006), research continues to look for traits or individual differences that may correspond to greater accuracy.

SUMMER 2017

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

The streamlined administration and established psychometric properties of the Big Five has made this conceptualization of personality a good fit with deception detection research (Elaad & Reizer, 2015) because the few studies comparing personality to deception detection almost exclusively relied on the Big Five model.

Big Five Taxonomy Used in Deception Detection Research

The Big Five taxonomy’s conceptualization of personality, which has connections to interpersonal relationships and general outlook on life, may be a good fit for differentiating deception detection ability. This could be due, in part, to the importance of interpersonal relationships and outlook on life in deception detection, which involves making judgments of veracity in individuals. Although there has not been a plethora of research investigating the relationship between personality traits and deception detection, and much of what does exist is inconclusive (Aamodt & Custer, 2006), the extant literature has revealed a small number of studies that have compared Big Five personality traits to deception detection, which are highlighted below.

Hirschberg et al. (2006) found a positive correlation between accuracy in a deception detection task and openness to experience, and further postulated that high levels of openness to experience correlate with a greater level of intelligence and the ability to use critical thinking in discerning truth from lie. Openness to experience has been positively associated with emotional intelligence, which is an integral part of determining veracity through recognition of emotions and nonverbal communication (McIntyre, 2010). Self-described deception detection ability has also been shown to have a positive relationship with openness to experience (Elaad & Reizer, 2015), indicating that this may be a trait that is related to deception detection.

Extraversion has been extensively linked to social interaction and lying in general. Kashy and Depaulo (1996) found that extraverts tended to tell more lies than their introverted counterparts, based, in part, on the function that smaller white lies can serve in smoothing social interactions. This additional exposure to lying may cause extraverts to become more adept at telling and detecting lies. Furthermore, Elaad and Reizer (2015) found a correlation between extraversion and self-reported deception detection ability. Caution must be taken, however, when evaluating the results of self-report deception detection because confidence in

accuracy does not always equate to actual accuracy regarding deception detection (Aamodt & Custer, 2006).

Hirschberg et al. (2006) also concluded that a positive relationship existed between agreeableness and deception detection ability. This conclusion was based on the premise that, because people exhibiting high levels of agreeableness tend to be more sensitive to the behaviors and attitudes of others, they would be able to discern truth from lie more effectively than those who are less agreeable. Although generalized trust, and to some degree, agreeableness, have been shown to predict a higher propensity to believe a story as true, regardless of its actual veracity (Carter & Weber, 2010; Elaad & Reizer, 2015), the relationship between agreeableness and actual deception detection ability remains unclear because this is a topic that has remained relatively untouched.

There are contrasting opinions regarding the relationship between neuroticism and deception detection. Some research has hypothesized that, because individuals scoring high in neuroticism may have a hard time making decisions, they tend to report low levels of deception detection ability (Elaad & Reizer, 2015). Others have speculated that high levels of neuroticism may predispose individuals to judge a statement as truthful because individuals scoring high in neuroticism may not be as well-equipped to handle the ramifications of being deceived (Hirschberg et al., 2006).

Many of the studies linking deception detection to Big Five personality traits do not mention conscientiousness (Hirschberg et al., 2006). These unsupported hypotheses and lack of definitive conclusions (Elaad & Reizer, 2015) suggest that the associations between deception detection and conscientiousness and neuroticism respectively are not as strong as those between the other three traits (extraversion, openness to experience, and agreeableness) and deception detection.

Beyond actual deception detection ability, a growing body of research has indicated that people may exhibit a truth bias. This truth bias suggests that people have a propensity to believe a statement is true, regardless of its actual veracity (Truth Default Theory, see Levine, 2014). This theory may relate to certain personality traits such as agreeableness and conscientiousness, although previous research has not yet examined these relationships.

Deception Detection Tasks

People are confronted with deception in their daily

lives in a wide variety of uncontrolled settings, and there are many extraneous variables affecting the outcome of any given situation involving deception. These factors make deception detection difficult to measure. Fortunately, video clip studies provide a scientifically sound experimental design that controls some of these extraneous variables and allows for comparison between subjects. In an experiment similar to the current study, Carter and Weber (2010) had participants watch eight video clips and make veracity judgments of each person speaking. By having all participants watch the same video clips, which were categorized as truth or lie, Carter and Weber's design allowed for comparison between subjects on deception detection task scores, and provided a foundation on which this current study is based. Sweeney and Ceci's (2014) deception detection study also found that, when compared to visual or written modalities, audiovisual modalities allowed for the most precise ratings of deception detection.

Summary

Although previous meta-analysis has not revealed a strong connection between personality traits and deception detection (Aamodt & Custer, 2006), a recently growing body of literature has been examining Big Five personality traits as they relate to deception detection ability (Elaad & Reizer, 2015; Hirschberg et al., 2006). The Big Five taxonomy has a potential link to deception detection ability due to the relationship that both concepts have with evaluation of an individual's outlook on life as well as understanding interpersonal relationships. It certainly seems that further research is warranted into this subject, with the end goal of being able to identify traits or characteristics that may be able to serve as a differentiator between accurate and inaccurate lie detectors.

Current Study

The current study evaluated Big Five personality traits as a manner of distinguishing individual differences in deception detection ability. Although previous studies have attempted this comparison using a self-report measure of deception detection ability (Elaad & Reizer, 2015) and through a task using verbal language in simulated interviews to identify deception (Hirschberg et al., 2006), to the best of our knowledge, no research has ever investigated the relationship between Big Five personality traits and deception detection using a short video clip task.

By using a video clip deception detection task and an established Big Five Inventory (BFI; John et al., 2008), this design maximizes the potential for finding significant results, as well as minimizes the effects of confounding variables. It was predicted that participants' levels of agreeableness, openness to experience, and extraversion would have a positive correlation with accuracy scores on the video clip deception detection task. In addition, it was hypothesized that participants would be more likely to choose truth over lie, regardless of the actual veracity of the story, and that agreeableness and conscientiousness would correlate positively with the frequency that truth is chosen.

Method

Participants

Participants were college-aged students recruited from a Midwestern university. Participants received extra credit points in their undergraduate psychology class in exchange for participation in this study. Of the 228 people who participated, 53 were men, 173 were women, and two did not respond to this question. The sample was mostly comprised of 116 European American individuals, 28 identified as African American, seven identified as Asian/Vietnamese/Hmong, seven identified as mixed/other, and two did not specify ethnicity. Participants' ages ranged from 17 to 38, but 88.2% of the participants were in the 18 to 22 age group ($M = 20.41$, $SD = 2.65$). In regard to collegiate experience, 90 participants were first-year students, 37 were sophomores, 39 were juniors, 57 were seniors, and five classified themselves as "other."

Materials

Personality inventory. Because the original BFI is very extensive and time consuming for participants to complete, John et al. (2008) created a short form of the BFI, which consists of 44 questions that are a valid and balanced representation of the five main personality dimensions. Participants rate each of the 44 items on a 5-point Likert scale from 1 (*disagree strongly*) to 5 (*agree strongly*).

Based on the results of the current study, internal consistency was calculated. The eight items that measured extroversion were combined to form a summed total extroversion score ($\alpha = .85$). Similarly, the nine items comprising agreeableness were summed to form a total agreeableness score ($\alpha = .74$). The eight items measuring conscientiousness were combined to form a total conscientiousness score ($\alpha = .77$). The eight items

SUMMER 2017

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

measuring neuroticism were similarly combined to form a total neuroticism score ($\alpha = .79$). Finally, the 10 questions comprising openness to experience were also summed to create a total openness to experience score ($\alpha = .75$).

The internal consistency levels for the current study were similar to the results of John and Srivastava's (1999) reliability testing, which yielded a mean alpha score of .83. Further validity testing also showed that the BFI exhibits evidence of convergent validity with other measures of personality such as the Neuroticism, Openness, Extraversion Five Factor Inventory, and the Trait Descriptive Adjective test (John & Srivastava, 1999).

Video clips. As part of the current study, participants also watched eight video clips of undergraduate student volunteers telling a story. Four of the stories were false, and four of them were true. The true and false stories were presented in a random order. All participants watched the same eight video clips, in the same order. Participants rated each video as either true or false. Each participant's total number of accurate judgments was combined to form a total accuracy score. Each participant's total accuracy score was summed and averaged to create an overall accuracy score. The number of times each participant selected truth was also calculated to form a total truth selection score. Each truth selection score was summed and averaged to create an overall truth selection score. For a complete listing of descriptive statistics pertaining to the measures used, please see Table 1.

Procedure

All aspects of this experiment were approved by Minnesota State University, Mankato's institutional review board prior to the beginning of

data collection (IRB Approval # 797429-2). Once selected for the study, participants watched eight separate video clips depicting a true or false story, and then made veracity judgments following each clip. After participants finished watching the video clips, they filled out a brief demographic section and a short form of the BFI.

Results

Throughout the data analysis process, the hypotheses mentioned earlier were considered. Specifically, bivariate correlational analysis was used to evaluate relationships between personality traits and overall accuracy scores. Each participant's average of truth selections was calculated and compared to what would be expected by chance using a one-sample *t* test. Bivariate correlational analysis was also used to evaluate relationships between personality traits and overall truth scores.

Big Five Traits and Deception Detection Task Accuracy

Although this study hypothesized a correlation between openness to experience and overall accuracy scores, the results of the correlation indicated no significant relationship ($r = .05, p = .47$). Similarly, the hypothesis that agreeableness would correlate with accuracy was also not supported ($r = .01, p = .87$). The hypothesis that extraversion would correlate with accuracy scores was not supported either ($r = .01, p = .85$).

Accuracy and Frequency of Truth Selection

Initial analysis revealed that the average overall accuracy rate of all participants in this deception detection study was slightly above chance (58%). The frequency of participants' rating of truth (versus lie) for each video were averaged and summed to form an average frequency truth rating for all participants ($M = 4.42, SD = 1.08$). When compared to what would be expected by chance ($M = 4$) using a one-sample *t* test, participants showed a significant preference toward choosing truth, $t(220) = 5.66, p < .001, d = .54$.

Big Five Traits and Frequency of Truth Selection

Participants' personality scores were correlated with overall frequency of truth ratings, and no significant results were found for any of the five traits (extraversion: $r = .06, p = .37$; agreeableness: $r = -.01, p = .98$; conscientiousness: $r = -.04, p = .52$; neuroticism: $r = .02, p = .82$; and openness to experience: $r = .01, p = .97$).

Trait	<i>M</i>	<i>SD</i>
Openness to experience	3.25	0.60
Conscientiousness	3.73	0.60
Extraversion	3.35	0.78
Agreeableness	3.96	0.54
Neuroticism	2.98	0.74
Accuracy in lie videos (/4)	2.09	0.81
Accuracy in truth videos (/4)	2.48	0.77
Overall accuracy (/8)	4.57	1.14
Overall frequency of truth	4.42	1.08

Discussion

Unfortunately, meta-analysis exploring the relationship between personality traits and deception detection ability has not produced conclusive findings to date. However, researchers have continued to investigate this topic, due to the shared emphasis that Big Five traits and deception detection place on interpersonal relationships and worldview. Some studies (Elaad & Reizer, 2015; Hirschberg et al., 2006) have found significant relationships between Big Five personality traits and deception detection ability. Additionally, the current study did not find similar significant results, indicating that Big Five traits may not be an effective differentiator of deception detection ability. Potential explanations for the lack of significant findings as well as limitations and directions for future research are presented in this section.

Methodological Limitations

The aforementioned lack of significant findings warrant an analysis of power to rule out the possibility that a small sample size led to an inability to detect significant findings. A program called G*Power 3.1.9.2 was used to conduct power analyses, with an alpha cutoff of .05 used for all analyses. Even if a hypothetical weak effect ($r = .3$) existed, a sample size of 228 (the size of the sample in this study) would yield a beta value of .99, indicating that this sample size would be adequate to detect a small effect, assuming one did exist. Additionally, an effect size of .02 (the average correlation between Big Five traits and deception detection ability), would require a sample size of 19,620 to adequately detect an effect ($\beta = .8$). These power estimates reveal that sample size was not a contributor to the lack of significant findings.

It is also noteworthy that a significantly greater number of women (173) participated in the study, compared to men (53). Previous literature has shown that women are more likely to respond to online research surveys than men (Smith, 2008). The reasons behind this gender disparity are not specifically clear, but it is nonetheless important to be aware of this potentially confounding variable. However, this was not a major concern for the current study because gender was not a primary variable of interest.

The type of deception detection task used might have played a role in the lack of significant findings. In Elaad and Reizer's (2015) and Hirschberg et al.'s (2006) research, which were similar to the current study in regard to comparing Big

Five traits to deception detection ability, different measures of deception detection were used (self-report and reviewing interview transcripts) compared to the short video clips used in the current study. These methodological differences might have contributed to the lack of significant findings, suggesting that accurate deception detection may involve more than just making a judgment based on a short video clip.

Another issue arising with the use of video clip deception detection tasks is that they may not induce the requisite motivation that real-life liars possess. Martin and Leach (2012) argued that traditional video clip deception detection tasks lack generality due to storytellers not being properly motivated to tell a realistic lie. Some research has included a monetary incentive to produce more realistic lie stories (Hirschberg et al., 2006). Monetary incentives for successful evasion of deception detection could allow for greater authenticity of the stories used in the video clip task.

Although previous research has indicated that individual differences in deception detection ability are relevant (Bond & DePaulo, 2008; Carter & Weber, 2010), Big Five personality traits do not appear to be an effective and reliable differentiator. This may be due, in part, to the difficulty of simulating the nuances and intricacies of real-life deception detection in a laboratory setting. The lack of significant findings in this study may also be attributed to the variable nature and expression of personality in general. Because manipulation is difficult to achieve in this type of research design (one cannot "assign" someone to a personality trait), it is impossible to rule out the effects of other causal variables. For example, Bond and DePaulo noted that sender credibility, among other factors, is very influential of the outcome of a deception detection scenario. Clearly, there are many different variables pertaining to deception detection ability, and personality may not play as large of a role as originally expected.

Truth Default Theory

Regardless of the veracity of the story, the data analyses performed did indicate that participants' propensity to choose truth over lie in the video clip task was significantly greater than what would be expected due to chance. This data falls into line with Levine's (2014) Truth Default Theory, and offers support for the theory that people may be more likely to believe a story, regardless of the veracity. Some evidence has suggested that

SUMMER 2017

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

generalized trust and agreeableness may relate to accuracy in deception detection (Carter & Weber, 2010; Hirschberg et al., 2006). Although data analysis did not find a significant correlation between any of the Big Five traits and overall truth score, future research could expand on this idea by exploring the relationship between attitudes and beliefs about deception in general to generalized trust and agreeableness.

Although the results of the one-sample *t* test comparing truth selection frequency to what would be expected due to chance were significant, the relatively moderate effect size of .54 indicates that the relationship was not as robust as previous research has shown. Levine (2014) indicated that the truth bias depicted in Truth Default Theory may not be as strong when people are engaged in situations where they are primed to expect deception. Because participants were told that they were going to be taking part in a deception detection study, this might have put them “on guard,” so to speak. Caution should also be taken when interpreting these findings of a truth bias due to the confounding nature of the personality traits of participants in this study. People who tend to be more agreeable also tend to have a truth bias (Kashy & Depaulo, 1996). Future research may want to look at the relationship between Big Five personality traits and truth bias to further generalize these conclusions.

Implications for Future Research

One intriguing direction that future research could pursue is whether experience in college (e.g., first-year, sophomore) influences deception detection ability. Investigating the development of personality, social values, and cognitions as manifested through the progression into adulthood may also be of interest for the field of deception detection research. Although personality generally remains stable in adulthood, adolescence and early adulthood can often be a time of changing values, traits, and cognitions. Studying these developmental shifts in the form of comparing younger college students (first-year students) to older ones (seniors) regarding deception detection ability and truth bias would be a worthwhile continuation of this line of research.

Given the generally high level of interest in this line of research, and the readily available population of college students, future research may want to move away from an examination of the relationship between personality and deception detection

ability, and instead focus on beliefs, attitudes, and perceptions about deception in general. Understanding how beliefs and attitudes about deception change over time and investigating the differences in beliefs between younger and older adolescents would be of particular interest.

However, just as deception detection research is conducted in the contrasting experiences of lab studies and real-life scenarios, cutting-edge research techniques and innovative ideas continue to blend the differences between these two approaches, and will hopefully allow researchers to gain a better understanding of the complex subject of deception detection. In summary, the current study’s lack of significant findings suggest that Big Five personality traits may not be a reliable predictor of deception detection ability. However, the significant findings related to a truth bias indicate that more research is needed concerning beliefs and attitudes about deception and how those relate to truth bias.

References

- Aamodt, M. G., & Custer, H. (2006). Who can best catch a liar? A meta-analysis of individual differences in detecting deception. *The Forensic Examiner, 15*, 6–11. Retrieved from <https://www.ncjrs.gov/App/Publications/abstract.aspx?ID=236906>
- Albrechtsen, J. S., Meissner, C. A., & Susa, K. J. (2009). Can intuition improve deception detection performance? *Journal of Experimental Social Psychology, 45*, 1052–1055. <https://doi.org/10.1016/j.jesp.2009.05.017>
- Bond, C. F., & DePaulo, B. M. (2008). Individual differences in judging deception: Accuracy and bias. *Psychological Bulletin, 134*, 477–492. <https://doi.org/doi:10.1037/0033-2909.134.4.477>
- Carter, N. L., & Weber, M. J. (2010). Not polyannas: High generalized trust predicts lie detection ability. *Social Psychological and Personality Science, 1*, 274–279. <https://doi.org/10.1177/1948550609360261>
- Cattell, R. B. (1945). The description of personality: Principles and findings in a factor analysis. *American Journal of Psychology, 58*, 69–90. <http://dx.doi.org/10.2307/1417576>
- Elaad, E., & Reizer, A. (2015). Personality correlates of the self-assessed abilities to tell and detect lies, tell truths, and believe others. *Journal of Individual Differences, 36*, 163–169. <https://doi.org/10.1027/1614-0001/a000168>
- Hirschberg, J. B., Enos, F., Benus, S., Cautin, R. L., Graciarena, M., & Shriberg, E. (2006). Personality factors in human deception detection: Comparing human to machine performance. *Columbia University Academic Commons*. Retrieved from <http://hdl.handle.net/10022/AC:P:20907>.
- John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative Big Five trait taxonomy: History, measurement, and conceptual issues. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.) *Handbook of personality: Theory and research* (pp. 114–158). New York, NY: Guilford Press.
- John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin, & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 102–138). New York, NY: Guilford.
- Kashy, D. A., & Depaulo, B. M. (1996). Who lies? *Journal of Personality and Social Psychology, 70*, 1037–1051. <http://dx.doi.org/10.1037/0022-3514.70.5.1037>
- Levine, T. R. (2014). Truth-Default Theory (TDT): A theory of human

- deception and deception detection. *Journal of Language and Social Psychology*, 33, 378–392.
<https://doi.org/10.1177/0261927X14535916>
- Martin, K., & Leach, A. M. (2013). Psychopathy and deception detection. *Personality and Mental Health*, 7, 154–159.
<https://doi.org/10.1002/pmh.1215>
- McCrae, R. R., & Costa, P. T. Jr. (1997). Personality trait structure as a human universal. *American Psychologist*, 52, 509–516.
<http://dx.doi.org/10.1037/0003-066X.52.5.509>
- McCrae, R. R., & Costa, P. T. Jr. (2004). A contemplated revision of the NEO five-factor inventory. *Personality and Individual Differences*, 36, 587–596. [https://doi.org/10.1016/S0191-8869\(03\)00118-1](https://doi.org/10.1016/S0191-8869(03)00118-1)
- McCrae, R. R., & John, O. P. (1992). An introduction to the five-factor model and its applications. *Journal of Personality*, 60, 175–215.
<https://doi.org/10.1111/j.1467-6494.1992.tb00970.x>
- McIntyre, H. H. (2010). Gender differences in the nature and linkage of higher-order personality factors to trait and ability emotional intelligence. *Personality and Individual Differences*, 48, 617–622.
<http://dx.doi.org/10.1016/j.paid.2009.12.019>
- Smith, W. G. (2008). Does gender influence online survey participation?: A record-linkage analysis of university faculty online survey response behavior. Retrieved from: ERIC Document Reproduction Service No. ED 501717. http://scholarworks.sjsu.edu/cgi/viewcontent.cgi?article=1003&context=elementary_ed_pub
- Sweeney, C. D., & Ceci, S.J. (2014). Deception detection, transmission, and modality in age and sex. *Frontiers in Psychology*, 5, 590.
<http://doi.org/10.3389/fpsyg.2014.00590>
- Tupes, E. C., & Christal, R. C. (1961). *Recurrent personality factors based on trait ratings*. Technical Report, U.S. Air Force, Lackland Air Force Base, Texas.
- Wang, G., Chen, H., & Atabakhsh, H. (2004). Criminal identity deception and deception detection in law enforcement. *Group Decision and Negotiation*, 13, 111–127.
<http://doi.org/10.1023/B:GRUP.0000021838.66662.0c>

Author Note. Samuel D. Spencer, Department of Psychology, Minnesota State University, Mankato.

This research was funded in part through a grant from the Undergraduate Research Center at Minnesota State University, Mankato. Special thanks to Dr. Emily Stark for all her guidance and wisdom, and to all *Psi Chi Journal* reviewers for their support.

Correspondence concerning this article should be addressed to Samuel D. Spencer, Department of Psychology, Minnesota State University, Mankato, 103 Armstrong Hall, Mankato, MN 56001. E-mail: Samuel.spencer@mnsu.edu.

SUMMER 2017

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

PSI CHI Advertising Contract: *Psi Chi Journal*

CLIENT INFORMATION

Advertiser

Contact Name

Address | Street or P.O. Box

City | State | Zip | Country

Phone (daytime)

E-mail

Submitted by

Authorized Signature

DIGITAL PUBLICATION

Issue

Spring _____ Summer _____ Fall _____ Winter _____

Size/Dimensions

Full page (no bleed) 6 5/8" x 9 1/4" Cost: \$400 Black & White only

Half page (horizontal) 6 5/8" x 4 1/2" Cost: \$275 Black & White only

Price: \$



OUR JOURNAL

Advertising in *Psi Chi Journal* allows you to connect with established psychology researchers and mentors, as well as undergraduates and graduate students striving to build a career in one of the many areas of research. People regularly visit our journal online to

- view current and past issues,
- submit their research for publication,
- learn about reviewing for *Psi Chi Journal*,
- share invited editorials as teaching tools in the classroom.

All issues and advertisements are permanently free online to both members and nonmembers alike. During the 2015–2016 fiscal year, psichi.org received **1.67 million page views**, ensuring that high-achieving students and professionals will see your content for years to come.

To further enhance the visibility of our journal, latest issues and calls for submissions are regularly featured in *Psi Chi Digest* e-mails (**180,000+ subscribers**) and on our three social media platforms.

- Facebook (22,500+ followers)
- Twitter (4,700+ followers)
- LinkedIn (10,200+ followers)

Articles are also indexed in PsycINFO, EBSCO, and Crossref databases—essential tools that researchers use to search for millions of psychology-related articles. This makes *Psi Chi Journal* a key place to communicate your message with our Professional Organization's **700,000+ lifetime members** and far beyond.

AD SPECIFICATIONS

Digital format: PDF, EPS, and TIFF
Resolution: 300 dpi | B&W line art—1,200 dpi
Black & white ads (no RGB or 4-color process) PDF settings: Press quality, embed all fonts

DEADLINE/BILLING

Payment due upon receipt of invoice.

CONTACT

Submit contract by e-mail to
Susan Iles
Advertising Sales
Psi Chi Central Office
E-mail: psichieye@psichi.org
Phone: 423-771-9964

See past issues of *Psi Chi Journal of Psychological Research* at http://www.psichi.org/?journal_past



Stay connected with PSI CHI
www.psichi.org

All advertisements must be scholarly and professional in nature, and *Psi Chi* reserves the right to reject (or cancel) any ads that are not in the best interest of the Organization or consistent with the Society's mission.

ADV-JN-DG (05-2017)



PSI CHI
THE INTERNATIONAL HONOR SOCIETY
IN PSYCHOLOGY

SUMMER 2017

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

Publish Your Research in *Psi Chi Journal*

Undergraduate, graduate, and faculty submissions are welcome year round. Only the first author is required to be a Psi Chi member. All submissions are free. Reasons to submit include

- a unique, doctoral-level, peer-review process
- indexing in PsycINFO, EBSCO, and Crossref databases
- free access of all articles at psichi.org
- our efficient online submissions portal

View Submission Guidelines and submit your research at www.psichi.org/?page=JN_Submissions

Become a Journal Reviewer

Doctoral-level faculty in psychology and related fields who are passionate about educating others on conducting and reporting quality empirical research are invited become reviewers for *Psi Chi Journal*. Our editorial team is uniquely dedicated to mentorship and promoting professional development of our authors—Please join us!

To become a reviewer, visit www.psichi.org/page/JN_BecomeAReviewer

Resources for Student Research

Looking for solid examples of student manuscripts and educational editorials about conducting psychological research? Download as many free articles to share in your classrooms as you would like.

Search past issues, or articles by subject area or author at www.psichi.org/?page=journal_main

Add Our Journal to Your Library

Ask your librarian to store *Psi Chi Journal* issues in a database at your local institution. Librarians may also e-mail to request notifications when new issues are released.

Contact PsiChiJournal@psichi.org for more information.



Register an account:
<http://pcj.msubmit.net/cgi-bin/main.plex>

