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*Florida Institute of Technology*

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An Examination of Generational and Gender Differences Among Baby Boomers  
on the Scale of Accurate Personality Perception (SAPP)

By

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School of Psychology at  
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in partial fulfillment of the requirements  
for the degree of

Doctorate  
In  
Clinical Psychology

Melbourne, Florida  
December 2018

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We the undersigned committee hereby approve the attached doctoral level project,  
“An Examination of Generational and Gender Differences Among Baby Boomers  
on the Scale of Accurate Personality Perception (SAPP)”  
by Nicole Lane Murray, M.S.

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## Abstract

TITLE: An Examination of Generational and Gender Differences Among Baby Boomers on the Scale of Accurate Personality Perception (SAPP)

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Generations and their differences, as well as the construct of self-knowledge, have been studied at length due to their potential predictive power over an individual's behaviors. This research proposes to build upon these constructs by blending them together in order to see the differences that exist on various personality dimensions, as well as on self-knowledge, between the Baby Boomer generation and the general population. In order to test these hypotheses, archival data were used. Participants in the archival data set were grouped based on their generation depending on the year of their birth. The federal government, specifically the U.S. Census Bureau, defines the generational cutoffs. The Baby Boomers include those individuals who were born between 1946 and 1964. Generation X includes people born from 1965 to 1980, and the Millennial generation includes those born from 1980-2000.

Statistical analyses were run in order to compare the mean SAPP scores of the baby-boomer generation to those in a random sample of the other two generations in order to test which group as a whole had the most accurate perception of self-knowledge. Additionally, mean SAPP scores from both the male and the female groups of those included in the baby boomer generation were compared statistically in order to test if either older men or women had more accurate personality

prediction. Additional hypotheses, in order to further explore the variables, were also tested. Discussion of the results, as well as the implications and limitations of the study, complete this final project.

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An Examination of Generational and Gender Differences Among Baby Boomers  
on the Scale of Accurate Personality Perception (SAPP)

**Literature Review**

**Generational Differences**

Grouping, the placing of others into certain categories, is an instinctive practice that humans have used for millennia. Being able to characterize fellow humans and place them into these groups has been an invaluable practice, and one that has fascinated researchers. One of the many consequences of grouping, however, is inevitably the comparing of groups to each other through a number of selective criteria. One of these criteria has been generational placement, and in the study of society, humans have effectively used grouping to make comparisons between large sections of the world population by classifying individuals into generations, based upon the years of their birth. Generations, by definition, are groups of people living contemporaneously on the planet, and therefore presumably experience the same events throughout a time period, and have qualities in common with each other by nature of the era and the experiencing of it. Americans, especially, have used the concept of “generations” as a method of studying what exactly these similar qualities are of people who have lived through the same decades. Perhaps one of the most well-known current generations in the United States is the Baby Boomer generation, which includes Americans who were born beginning in the year 1946 through the year 1964. These people were ushered into the post-World War II American landscape, and have been driving change and

shifting the age structure of the U.S. population since then (Colby & Ortman, 2014).

### **Baby Boomers**

The Baby Boomers began turning 65 in 2011 and are projected to all reach the ages of 65 and over by the year 2029, making up one fifth of the total U.S. population at that time. Researchers have been trying to project how this massive demographic shift will change the cultural makeup of America over the coming years, especially with respect to health care professionals, including those involved in mental health delivery services. Demographically, the baby boom cohort is comprised of 81.5% Caucasian individuals, 11.7% African American individuals, and around 4.6% Asian individuals. American Indian and Alaskan Native individuals, Native Hawaiian and Other Pacific Islander individuals each comprise less than one percent of the baby boomer cohort, and those of two or more races make up just over one percent. With regard to Hispanic origin, around 72% of the baby boomer cohort is classified as Non-Hispanic White alone, and around 10.5% are considered to be Hispanic (Colby & Ortman, 2014). By 2060, it is projected that less than one percent of any racial group or group of people from an ethnic origin will consist of individuals from the baby boomer cohort.

There are a number of historical events, technology changes, and cultural shifts that the baby boomer generation has experienced throughout their life course. For instance, the baby boomer generation grew up during the rise of mass marketing, and also saw major technological advances, such as television and then

the rise of the internet (Reisenwitz & Iyer, 2007). Research on this generation has shown that as a whole, their socioeconomic grouping falls above average compared to other generations, and that baby boomers are interested in consuming products, and spending their money. However, their diversity has often presented challenges for advertisers and businesses looking to sell products, because baby boomers often differ across many characteristics, such as their marital status, career patterns and experiences, and whether or not they have children. However, despite these demographic differences, baby boomers have been shown to be a very like-minded group, which researchers explain by the amount of shared experiences that the generation has had. Despite this, business journals and scientists have attempted to split this large, diverse group into two smaller cohorts. These are often referred to as the “Vietnam group” (1946-1955) and the “Me group” (1956-1965) (Reisenwitz & Iyer, 2007).

The Vietnam Group experienced different major life influences than the Me group, with the former living through the Vietnam War, the civil and women’s rights movements, and the advent of birth control medication, while the latter experienced “Reaganomics” and the birth of numerous new technologies. Studies on these groups have shown that the Vietnam group has common traits such as being “highly individualistic, irreconcilably divided, inner-directed, spiritually adventurous, and workaholics” (Reisenwitz & Iyer, 2007, p. 203). The Me group, by comparison, is better described as having “abnormally high expectations, prolonged adolescence, being well-educated, but also being spiritually

conservative” (Reisenwitz & Iyer, 2007, p. 203). However, a study conducted by Reisenwitz and Iyer (2007) specifically examined differences between these two proposed cohorts within the generation, and counseled that trying to split the generation into smaller groups is ill-advised, because there are many more similarities than differences between the two major age groups, demonstrating the overall cohesion of the group.

### **More Recent Generations**

Despite having such strong in-group cohesion, baby boomers have significant differences with other birth cohorts, such as Generation X, Generation Y, and Millennials, across a wide variety of factors. Studies have examined facets of physiological health, opinions on consumer goods, and interpersonal preferences among these various birth cohorts in order to know how to best appeal to each group. An example of this is Carter and Kelley’s (2013) study examining the health status differences between Baby Boomer and Generation X participants. Specifically, they wished to examine the body mass indices (BMI) and healthy lifestyle behaviors and choices between the two birth cohorts. The participants included over 700 Baby Boomer and Generation X participants, and data were measured by both a health risk assessment and a BMI measure. The results of the study found that it was the Baby Boomer generation that was more likely to report having better health statuses, dietary habits, and more likely engagement in weekly aerobic physical activity than the Generation X participants, even after factors such as gender, race, education, and income were controlled for (Carter & Kelley, 2013).

Despite these factors, however, Baby Boomers also were found to be at a higher risk for being overweight and obese than those from Generation X. Due to Baby Boomers being older and having more financial and family security, they are also more likely to be able to engage in other factors such as healthy behavior, whereas those from Generation X are still needing to work and save money for retirement.

While Generation X comes after the Baby Boomers, Generation Y is the second largest birth cohort that currently exists in the United States population. Since these are the two predominant groups, Xers & Yers, they have had tremendous influence on the society's mores, values, and culture. However, these groups have significant differences in their psychological profiles that often conflict and can cause cultural tensions. Loroz and Helgeson (2013) examined these differences between the two generations in a pair of studies. They first examined 165 Baby Boomer parents and 123 Generation Y children from a university, all of whom completed a survey that examined their consumer values and personality traits. Of the Baby Boomers, approximately 75% of the group were females, compared to only half of the Generation Ys participants. Furthermore, the researchers found that Generation Ys scored significantly higher in their level of materialism than the Baby Boomers, whereas the Baby Boomers scored significantly higher in aspects of religiosity than did the Generation Ys. Additionally, it was found that on the domains of personality, Generation Y participants had higher self-monitoring levels when compared to Baby Boomers, specifically on their "ability to monitor self-presentation" factor (Loroz &

Helgeson, 2013). However, when it came to traits such as dispositional guilt and empathic concern, Baby Boomers reported higher levels of both of those traits than did their Generation Y counterparts.

For the second part of their study, Loro and Helgeson (2013) examined the effectiveness of various advertising appeals across the two groups, in order to build on what was found in their first study. The participants for this study included 352 Baby Boomers and 272 people from Generation Y. The survey included various advertisements and asked the participants to rank various factors on a Likert scale that evaluated each of the advertisements. The researchers found that while aspects of the items advertised had no intergenerational differences in terms of functionality or economical appeal, those from Generation Y had much more positive attitudes towards the image and extravagance appeals of products featured. Additionally, Generation Y participants had a much more positive attitude to products that featured sex appeal and greed appeal than did Baby Boomers, though there were no significant intergenerational differences between romance appeals. Overall, based on the study, it appears that Generation Y are more subject to high levels of peer influence and seek affirmation from the group, while Baby Boomers are more likely to engage in charitable contributions to the community and social responsibility.

Of all birth cohorts, society places a large focus on the new Millennial generation when examining the potential impact on society. Also, the significant gap of decades between the Baby Boomers and Millennial generations encourages

the suspicion of very large differences in their in-group characteristics. Beauchamp and Barnes (2015) conducted a study specifically examining what factors produce the most delight in each of the two generations, in order to understand what appeals most to each in the modern marketplace. The study examined nearly 300 participants, with around half of each representing the two different birth cohorts, and each completed an online survey. The results of the study found not only an intergenerational difference, but a gender difference as well, regarding female Baby Boomers versus female Millennials. It was noted that for female Baby Boomers, their delight in being a customer primarily stems from interacting with caring employees with expertise, who also provide some sort of compensation whenever any transaction fails to succeed. However, female Millennials preferred interacting with employees who were friendly, attentive, helpful, and who were quick and prompt with their service. It appeared that female Baby Boomers specifically looked the qualities of politeness, respect, and understanding in their interpersonal interactions, whereas female Millennials looked for excitement, friendliness, and attention (Beauchamp & Barnes, 2015).

Similarly, Kasen, Chen, Sneed, Crawford, and Cohen (2006) found gender-linked personality differences in women, with some of these differences being influenced by the birth cohort they were in. The researchers conducted a longitudinal analysis in which they followed around 750 mothers, who were assessed four separate times over two decades. Utilizing self-report measures, they examined gender roles, specifically traits which are considered masculine or



feminine, as well as factors such as marital support, marital conflict, and occupational prestige. The results of the study demonstrated that over one's life-course, there is an increase in both positive feminine-linked traits such as warmth, generativity, and relatedness, as well as positive masculine-linked traits. Birth cohort effects played a role in this, specifically with the Baby Boomers. It was noted in the study that Baby Boomers reported significantly more feminine-linked traits, and that they were the only sample observed to have an inverse relationship between marital conflict and masculine linked traits. This indicated that their relationships, either their initial marriage or remarriage, were characterized by low conflict and high marital support (Kasen, Chen, Sneed, Crawford, & Cohen, 2006).

These personality differences observed in birth cohorts are critical to understanding a predominant section of our population's culture. These differences and changes observed longitudinally with birth cohorts reflect the influences of society and history, as the group of interest journey through their life course. In order to examine how this psychosocial development occurs, and how the personality characteristics of those in a given generation can change, Whitbourne, Sneed, and Sayer (2009) studied two separate cohorts, leading-edge and trailing-edge baby boomers. These individuals were first tested while they were in college, and were followed and subsequently tested until they reached the age of 43. They were measured on the Inventory of Psychosocial Development, which examines the issues in Erikson's psychosocial theory of development. What was found in the study was evidence that personality does indeed continue to evolve throughout the

adult years, though the rate of some of the changes was small. Among the baby boomers, traits such as industry grew over the life course, as those in college moved into better, more fulfilling jobs. Women, specifically, grew in self-confidence and determination, which increased their industry scores throughout their mid-lives. Intimacy scores also increased, specifically among people who were not initially in a committed relationship, or who waited until their 30s to begin to have children. However, women demonstrated higher scores on intimacy, although the scores slowed and grew lower through midlife.

These changes observed in baby boomers over the life course, especially with regards to various aspects linked to mental health, will continue to have an effect on the public mental health system as they resolve developmental issues over their lives. Robotham (2011) also examined how the ageing of the Baby Boomer cohort will affect public mental health, by examining observed trends in the literature with regards to this population. Research has indicated that baby boomers are on a trajectory to have worse mental health outcomes when compared to previous generations. Additionally, five key areas were noted in the literature to have a substantial influence over mental health during the latter part of life: “wealth and poverty, discrimination, relationships, physical health, and participation in meaningful activity” (Robotham, 2011, p. 136). While a number of measures have been put into place in order to reduce discriminations based on age, and baby boomers on average have more accumulated wealth than their parents did, wealth

inequalities still have grown in recent years, which could potentially have a large impact on a portion of the baby boomer generation (Robotham, 2011).

With regard to relationships, there are concerns that due to the mobility of the generation, Baby Boomers will continue to be further removed from their families and friends distance-wise, which increases their social isolation. Also, baby boomers have had smaller families when compared to previous generations, which can also increase the likelihood of their isolation from others, leading to more negative impact on their overall mental health. However, the Baby Boomers who have access and skills with technology in order to access the internet can mediate this gap by communicating with their loved ones across distances, and the ability to use video technology can help encourage social relationships to protect against mental health concerns (Robotham, 2011). Physical health is also a crucial factor, and life expectancy improved throughout the life of the baby boomer generation, although obesity and other health factors discussed previously can have an impact on physiological health, which could negatively impact mental health. Finally, engagement in meaningful activity is another important facet to the long-term mental health of an individual. However, Baby Boomers may have to work later into their lives, which for some can increase the meaningfulness of their lives, but for others can continue to wear on their mental health. Promoting voluntary work has been shown to encourage health, if the activity is considered meaningful, which for baby boomers is important to explore (Robotham, 2011).

Encouraging Baby Boomers to develop an awareness of themselves, their preferences, and the state of their health is an important way in which to promote the improved health of the generation, as well as society as a whole, of which they constitute a large portion. However, in order to do this, it is important to understand how Baby Boomers see themselves, and to what extent their self-beliefs and perceptions are accurate ones. As the global landscape shifts with the movement of this generation further into ageing, there will be changes for numerous aspects of society. It is notably important, then, to ensure that the generation of people that will have the biggest impact, are conscious and aware of their needs, preferences, and psychological traits, in order to best inform others how to meet their own needs as their age increases. The focus of this study will begin with a look into the nature of the self, and the construct of self-knowledge, and then a discussion of a recently developed measure of the accuracy of one's self-knowledge.

### **The Self**

Defining the self as a construct has long been a struggle for social scientists, due to the abstract nature of what is attempting to be demarcated. There have been numerous other names given to what is known as "the self" including conscience, ego, identity, psyche, soul, or mind. Books and articles have been written by numerous researchers over the years in order to help quantify it into something that can be measured academically. Leary and Tangney (2012) recently have tried how to organize the construct of the "self" in terms of what it means to both behavioral and social sciences. They noted that the notion of "the self" seemed to be a

convergence of the numerous self-related topics, such as self-awareness, self-esteem, self-control, and self-monitoring, just to reference some. However, as complex and multifaceted as these topics are, the underpinning of each is the idea that human beings reflect on themselves, their feelings, and their experiences, and these behaviors separate the human being from other life forms. The study and philosophy surrounding the self, though, is not a new phenomenon, as it has existed for millennia, being documented in early Eastern writings, as well as in records of philosophers for eons. The topic, however, did not reach psychology until William James had the first detailed discussion in a chapter of his book in the year 1890. The journey of the topic historically took many forms, but had emerged as a central topic of investigation in the 1980s, and continues to be one today (Leary & Tangney, 2012).

Kihlstrom and Klein (1997) sought to answer the question, “What does the self look like?” They found that cognitive psychology provides four answers to this question, as it could be viewed either as a concept, a story, an image, or an associative network. When viewed as a concept, the self is an uncertain set of context-specific selves, possibly joined together by a characteristic self, or by an encompassing theory of why one is one person in certain situations, and another person in others. As a story, the self is seen as a narrative, or a group of narratives, which we have been formed and rehearsed, and related to each other. When viewed as an image, the self is a perceived object as it exists in the mind of the one perceiving it, which stores knowledge about both spatial relationships and visual

details about our physical appearances and gestures. Lastly, when viewed as an associative network, the self is a group of concepts regarding one's abstract traits, unique experiences, thoughts, and behaviors, in which semantic self-knowledge is independent of episodic self-knowledge (Kihlstrom & Klein, 1997). In Brown's (1991) chapter regarding the accuracy and bias in self-knowledge, he defines "the self" as a cognitive structure that fuses all the different methods in which a person typically answers the question "Who am I?". Usually the answers to that question fall into different categories: physical attributes, social identities, and personal identities. Therefore, when one defines the self, it reflects the individual's subjective perceptions of who he/she is. Existential philosophers encourage the pursuit of self-knowledge because they believe people have an obligation to understand themselves. Psychology has also encouraged self-understanding, because accurate self-knowledge may well be essential for effective functioning in the world. However, individuals frequently view their self-perceptions in self-enhancing directions and consequently have unrealistic positive views of themselves, or exaggerate their ability to control events that occur in their environments, or are overly optimistic about their abilities and futures in ways that are not realistic. In order to support this bias, a number of mechanisms are used, including employing self-enhancing illusions, avoiding negative feedback in order to maintain these illusions, and selectively attending to, interpreting, or remembering feedback. This battle in order to protect self-worth leads, ultimately,

to bias and inaccuracy in self-knowledge, and consequently can also lead to problems in individual's functioning (Brown, 1991).

Having knowledge about one's own personal traits, or the self, is something that has been found not only in psychological research, but in neuropsychology as well. Functional neuroimaging has shown that in normal, healthy adult brains, when people retrieve personal knowledge about their traits, activation of the medial prefrontal cortex (mPFC) increases. Additionally, when this part of the brain experiences damage, individuals with that damage have difficulty with the self-referential nature of their own memories. Marquine et al. (2016) conducted a case study with an individual, J.S., who had sustained this specific type of brain damage, and examined the accuracy and consistency of his trait knowledge compared to the knowledge he had of another person whom he frequently saw. Additionally, they compared the data of the individual to the performance of individuals who did not have damage to the mPFC. The results demonstrated that J.S. accuracy and consistency regarding his knowledge of himself was severely impaired when compared to healthy, undamaged adults. However, when J.S. had to access information that he had about the other familiar person, that ability was intact, as it would be in a non-damaged person. Though this case study examined one individual, it offers some support for the findings that the mPFC is crucial in the storage and retrieval of an individual's self-knowledge (Marquine et al., 2016).

### **Definitions of the self.**

While it has taken numerous years to focus on the self as an explanatory factor, the way in which it has been defined has been variable. There are five distinct ways in which people in the behavioral sciences commonly use and define “the self” and its derivatives, according to Leary and Tangney (2012). The first way refers to the self as the total person, in a way that is synonymous to the person that is being discussed. For example, psychologists use the term “self-mutilating” as referring to injuring or mutilating the physical being of a person. However, this “total person” definition does not encompass the psychological construct that psychologists typically refer to when they reference “the self”, and is therefore often seen as confusing to readers and practitioners (Leary & Tangney, 2012). The second type of definitions sees the self as equivalent to the term “personality”, and thereby encompassing all of the parts of an individual’s personality. For instance, when Maslow referenced self-actualization, he was noting the actualization of that person’s personality. However, this second type is also confusing because it implies that, to date, all of the research on personality is also research about the “self”, and vice versa. The self as “the experiencing subject” is the third type of self-definition, or otherwise known as the “self as I”, which implies the self-awareness and self-consciousness nature of the self. This self is the psychological entity that is the core of an individual’s experiencing self, or one’s “mental presence”. The “self as I” is perhaps the most difficult derivative to understand scientifically, because there has not been an underlying neuropsychological structure that has been found



to cause the experience of the self, and thus no way to quantify it (Leary & Tangney, 2012).

On the other side of the “self as I”, is the “self as Me” which constitutes all the component parts and beliefs one holds about oneself. This “self as Me” is Leary and Tangney’s (2012) fourth definitional type, and includes the perceptions, thoughts, beliefs, and feelings that someone has about oneself. The term self-disclosure is best representative of this definition of the self, because it reflects how people share the information about themselves with another individuals. Other terms linked to this idea are things such as self-concept or self-image, which better encapsulate the different beliefs and knowledge one has about oneself. It should become somewhat obvious, that the construct of self-knowledge, which is at the core of the present research project, would fall within this conceptualization of the “self as Me” category. Finally, the remaining definition of the self is the self as executive agent (Leary & Tangney, 2012). This refers to the self as the decision making and doing aspects of oneself, and the structures which determines how the person acts and behaves in the world. Phrases such as self-control or self-regulation best describe this final type of self, because it implies that people are able to control their behavior and make executive decisions as to how to act in the endless situations they encounter. Given all these different definitions of the self, and the lack of specific research and study of what these different pieces mean for a person’s lived experience, it is difficult to still understand what the self truly is. However, research in this field is crucial, in order to better understand why humans

are able to “attend to, think about, and act on themselves in ways that are not possible for any other animal” (Leary & Tangney, 2012, p. 12).

### **Self-Knowledge**

After establishing the idea of the self, the question that follows is inevitably, how do humans learn about themselves, and perhaps more importantly, how do they learn about their own selves, or what is commonly known as self-knowledge? When discussing self-knowledge, it often reflects knowledge of one’s personality traits. However, it does not often discuss how those personality traits are developed. Do individuals knowingly self-create them, or are they developed over time and we gain awareness and knowledge of them? Much of the previous literature has suggested that personality traits are developed by the sum of our previous behaviors, and how we have behaved, historically. However, Schneider, Roediger, Henry, and Khan (1993) argue that while some of the knowledge people have about their own personalities comes from this pathway, it is not the only pathway to gaining self-knowledge. Rather, one’s personality traits may in fact be representative of ones’ goals and intentions in life. Consequently, if some people are trying to decide whether or not they are conscientious, they will often look to their goals and aspirations, as opposed to their past behaviors (Schneider et al., 1993). This pathway though, is more susceptible to bias than relying on past experiences, because those goals have not yet been achieved.

Two important issues emerge with respect to self-knowledge: How do people develop their self-knowledge, and how accurate are they conclusions about themselves?

### **Development of Self-Knowledge**

Numerous researchers have attempted to answer this difficult question, and in their efforts have encountered a number of obstacles. Adler (2012) argues that because the topic of self-knowledge includes so many facets, and is so important, there is not one method that can be used to accurately assess how self-knowledge is developed. Trying to measure self-knowledge in an objective manner can have numerous obstacles, but relying on biased self-perceptions also contains inherent difficulties. Narrative psychology, however, has attempted to bridge the gap between both of these by not only including the scientific perspective through inclusion of validity and reliability facets, but also embracing the subjectivity approach through the use of subjective individuals', stories, or narratives. The narrative perspective challenges the scientific model by arguing that the self, and consequently self-knowledge, is internal by its very nature and therefore must include a subjective approach. Thus, the individual is treated then as an expert on his/her own lived experience, a system in which elements of one's narrative can be encoded into a more measurable and objective manner to bridge the gap between the more objective and subjective methodologies (Adler, 2012).

In this dual manner, the body of research involving self-knowledge, has involved two different pathways for how individuals learn about themselves. One

of them is introspection, where individuals look inward for the answers as to who they are, and the other is explicit feedback from others about themselves and how they are perceived. Bollich, Johannet, and Vazire (2011) have examined these two pathways and their respective potential for improving someone's self-knowledge. They argue that explicit feedback is likely one of the best pathways in order to learn about one's own personality. Introspection, it is argued, is often fraught with biases about one's own abilities and traits. When others, especially those close to individuals and knowledgeable about them, give feedback to them, though it may be resisted and not received, it often can provide new insight into blind spots that introspection can miss (Bollich, Johannet, & Vazire, 2011). Though external methods of gaining self-knowledge are pathways for gaining more accurate self-knowledge, the pathway of introspection is one of the primary ways individuals gain it. Many argue that self-focused attention can encourage accurate judgments of many cognitive factors of oneself, such as attitudes and standards, as well as somatic aspects that an individual experiences, such as sensations, arousal, and emotions. However, these self-reports are usually flawed and inaccurate because even with self-focused attentions, Silvia and Gendolla (2001) argue that humans cannot access large portions of their inner selves, and are poor judges of even their somatic states. The researchers argue against the perceptual accuracy hypothesis, which dictates that with increased introspection, the accuracy of self-knowledge increases. Silvia and Gendolla (2001) discuss that the evidence simply does not support this hypothesis, and that the research is fundamentally flawed due to a lack

of consideration of the logics of accuracy research, and the how honest an individual is being in self-report measures. The researchers argue that in order to truly establish a self-theory for the accuracy of self-knowledge, these limitations need to be taken into consideration, further supporting the view that introspection does in fact not increase accuracy in self-knowledge.

### **Accuracy of self-knowledge.**

Having self-knowledge is generally correlated with having insight, and the ability to assess and know one's abilities. However, research has yet to demonstrate whether individuals' insight into their own capabilities is accurate or inaccurate. Zell and Krizan (2014) attempted to study this by examining participants' self-evaluations across domains of ability, such as intelligence and language competence, and how those corresponded to their scores on objective performance measures. The researchers analyzed 22 meta-analyses, and found that across the study, though the effect sizes were different, there was an overall moderate correlation between self-evaluations and their outcomes on performance measures. The correlation was stronger when the evaluation of the individuals on their own abilities was more specific to a single domain rather than broader ones, as well as when their performance tasks were familiar to them, more objective in nature, or not very complex. The metasynthesis, therefore, demonstrates that individuals have only a moderate level of insight into their own abilities, so there are inaccuracies in self-perception that can be accounted for by contextual factors (Zell & Krizan, 2014).

In evaluating the self-concept, there is arguably a substantial amount of ambiguity and bias involved due to individuals' perception of themselves. Felson (1981) attempted to examine this effect by conducting a study in which college football players were examined in regards to their self-concepts and how it affects both ambiguous and unambiguous abilities. The researchers had the players self-evaluate themselves on different abilities, and also asked the players' coaches to rate them on those same abilities, as well as estimate the players' levels of self-confidence. Their hypothesis was that the player's self-confidence would predict their self-ratings better for abilities that are more ambiguous as opposed to those that are unambiguous. Additionally, Felson (1981) believed that the football players would give themselves higher ratings on abilities that are more vague, as opposed to more clear-cut. The sample included 72 football players, as well as 15 "position coaches", who worked more closely with small groups of players. The results of the study demonstrated that the football players did in fact rate themselves much higher on the four ambiguous abilities than their coaches did, but had ratings more closely aligned with the coaches' rankings on the unambiguous abilities. However, the coaches were also found to rate players higher on ambiguous abilities, though not as high as the players themselves. Self-esteem, it is believed, and the desire to maintain it, was the reason for increased scores on ambiguous items, because people tend to see either what they expect or want to see (Felson, 1981).

Bollich (2012) conducted another study that examined whether or not individuals are aware of their own self-biases in their self-knowledge. In this study, the researcher had 130 participants assess whether or not they had insight into their own positive and negative biases about themselves across different personality traits. The hypothesis was that the biases about the self that an individual possesses arise from the deception of the self, caused by the distortion within the individual of more realistic views of the self, and consequently the individual should be aware of their biases. The results of the study demonstrated, as predicted with the hypothesis, that people who had more positive biases of self-knowledge described themselves as having a positive bias, with the same being true for those with a negative bias. The implications of the results 1) suggest that people know more about themselves and their biases than they want to admit, 2) provides some evidence that the bias serves a function for the individual, and 3) that their self-distortions of the self-knowledge are intentional.

With the bias inherent in evaluating oneself, or relying on the evaluations from only significant others, Vogt and Colvin (2005) utilized a multifactor methodology to help effectively measure participants' accuracy of their self-knowledge, which included self-report measures, videotaped dyadic interactions that were later assessed, and observations and ratings made by parents, friends, and behavioral coders. Each of their 93 participants completed both the California Adult Q-sort (CAQ), and the Revised NEO Personality Inventory (NEO-PI-R), and also interacted with two unacquainted same-sex and opposite sex-partners on

videotapes. Additionally, two parents/guardians and two friends of each of the participants completed the CAQ and the NEO-PI-R for the participant and the videotaped interactions were coded in regards to behavior using the Behavioral Q-sort (BQ). The results of this study demonstrated that the battery completed by participants, when aggregation of scores occurred, provided psychometric support for its internal consistency reliability and convergent validity in being a procedure for assessing individual differences in the accuracy of self-knowledge (Vogt & Colvin, 2005). Although this multifactorial approach has considerable scientific value, its utilization within clinical and/or other real-life decision-making settings will likely be hampered by the intensive time necessary for the individual data collection.

Though individuals' self-perceptions are often biased and faulty, research has yet to explore why judging one's own competence is so difficult. Carter and Dunning (2008), however, argue that self-evaluation is an innately difficult task, and one that contributes to peoples' inaccurate view of their competence. People often live in an environment that prohibits accurate self-evaluation because it does not contain all the necessary information needed to make accurate conclusions. This is due to two primary reasons; one that people lack the necessary categories of information to make accurate determinations, and secondly, though they receive feedback from others to correct their inaccurate assessments, that feedback is often flawed due to biases or difficulty in comprehending it. Since the information people receive is often misleading and faulty, naturally, self-assessments would also be



faulty since they are based on faulty information, thus making it unreasonable for individual's self-assessments to be accurate (Carter & Dunning, 2008). Having flawed self-assessment extends from beyond interpersonal relationships, and into domains such as health, education, and the workplace. Dunning, Heath, and Suls (2004) examined the effect that inaccurate self-knowledge has on these domains by reviewing empirical findings.

In the domain of health, for example, studies have demonstrated that people are unrealistically optimistic about the dangers to their own health compared to those around them. This causes them to overestimate the distinctiveness of their health opinions and preferences, which can then lead to adverse health impacts. Additionally, inaccurate self-perceptions cause people to misdiagnose themselves, which can also cause health consequences. In the domain of education, students' own assessment of their performance only moderately correlates with the assessments of those students made by their teachers. Students also tend to feel overly confident in skills they just learn, while also unable to access their skills in comprehending materials they just read. Inaccuracies in self-perceptions contribute to over inflated beliefs in academic skills, which while promoting self-confidence do not contribute to retention of skills and consequently do not promote learning. Within the workplace domain, data from samples of employees to CEOs across various companies, suggest that both groups overestimate their skills and judgment, respectively (Dunning, Heath, & Suls, 2004). Being able to accurately measure self-assessment is therefore increasingly important, because the inaccuracy of self-

assessment, if left unattended, can have substantial effects on health, education, and work.

With a great extent of the research on self-knowledge continually demonstrating the inherent bias in one's own self-concept, research has turned to finding out what contributes the most to this bias. With certain characteristics such as narcissism, that bias is even more substantial. Being able to identify narcissistic individuals has been researched numerous times, but often uses strangers as the perceivers of the narcissistic individual. What has often been found, is that strangers' ratings of those with more narcissistic tendencies were influenced by the stylish appearance of those individuals, and thus consequently led to more favorable first impressions. Park and Colvin (2014) attempted to study how individuals' rate those with narcissistic tendencies when the raters were close friends of the individual, as opposed to strangers, thereby perhaps being immune to any superficial influences. To do this, 66 participants were recruited and completed both the Narcissistic Personality Inventory as well as the California Adult Q-sort, which examines personality. The close friends also completed the California adult Q-sort and responded about the target individual. The results of the study indicated that participants who scored higher on having narcissism rated themselves in increasingly favorable and extremely positive ways compared to their close friend's ratings of them on the same measure.

With the majority of research indicating that people actually do not have accurate self-knowledge, but rather ambiguous and biased knowledge that is often

inflated, how can researchers change the assumption that individuals know themselves better than anyone else can know them? Vazire and Mehl (2008) attempted to challenge that assumption by conducting a study to examine if a person can know a target individual as well, or better than, the target individual knows himself or herself. To do this, they conducted two separate tests, the first to illustrate the assumption that individuals do, in fact, believe that they themselves are the best expert of their own self-knowledge. The second test, and the one most relevant to the point under discussion, directly tested the self-accuracy of the target individuals against others' accuracy of them, using objective behavioral criteria. Sixty-one participants were asked to rate a target individual's daily behavior by measuring acts over four separate days, while the target individuals also rated their own behavior. The results of the study demonstrated that the others close to the target individual were as accurate as that target individual in predicting their daily behavior. The results of the study contradict the underlying assumption of most people and demonstrate that there is not a single perspective that can best show knowledge of an individual, because each perspective whether self or other can provide its own unique insight into behaviors (Vazire & Mehl, 2008).

Most people would argue they know themselves better than anyone else knows them; however, people's perceptions of their own personalities often contain important omissions. Vazire and Carlson (2011) postulated individuals misperceive some aspects of their personality due to blind spots, which may be simply due to a lack of information, or a motivation to maintain and enhance our self-worth.

Research shows some people go to great lengths in order to maintain a positive view of themselves, which often and inadvertently skew their self-assessment. Vazire (2010) proposed the self-other knowledge symmetry (SOKA) model to examine the aspects of personality known uniquely to the self or to others. According to the SOKA model, the differences between what people know about themselves and what others know about them are driven by motivational biases that influence the perceptions of the self and others. Vazire (2010) further proposed that the self has better information than others for judging internal traits, while others have better information for judging the more external, overt traits. Consistent with these hypotheses, Vazire conducted a study in 2010 which showed self-ratings of internal, neutral traits were better than participants' friend's ratings, whereas, the friends' ratings of external, evaluative traits were better than self-ratings at predicting performance in certain areas. Therefore, both self-perception, along with others' views, are necessary to know one's personality.

Previous research has shown that when some people repeatedly select certain traits about themselves, and incorporate them into their self-knowledge, it subsequently has an impact on how corresponding traits are perceived by the individual and by others around them. Though people usually interpret and judge other people by using the traits that they themselves identify with, not much is known about the accuracy of those judgments. Shoda and McConnell (2013) conducted a study to explore whether chronicity contributes to increased accuracy in interpersonal sensitivity. The study examined 44 college students who each

completed a measure that assessed the construct of attribute chronicity by using individuals' response times when they were asked to identify with certain trait words. The results of the study demonstrated that individuals who identified trustworthiness as a well-developed trait in the response time measure, were better able to distinguish that same trait in a game where they had to differentiate between characters who were cheating or being cooperative. Therefore, individuals who strongly identified with trustworthiness had higher interpersonal sensitivity and were able to detect trustworthiness better in others (Shoda & McConnell, 2013).

Overall, the research on self-knowledge seems to suggest that while there are numerous pathways to take in order to gain knowledge about themselves, humans still find it highly difficult to gain accurate, unbiased information. Numerous methods have been examined in how to best study and identify self-knowledge, and whether self-knowledge can even be studied due to its own nature as being an internal phenomenon. However, explicit feedback, the narrative perspective, and interjudge agreement have all been examined as pathways to achieve greater self-knowledge. Yet, it also appears that the best way to accomplish this is through external sources of information, rather than from within, due to the biases one has about their own skills and abilities. In order to help increase the accuracy in studying the measurement of self-knowledge, it is important to specify the domains, and make them objective in order to increase the correlation between what is being rated and the individual's evaluation of their own abilities. It is important to note, though, that people know more about themselves and their biases

than they are willing to admit, and that being able to accurately measure self-assessments and self-knowledge is important due to numerous societal problems associated with inaccuracies in self-assessment.

When creating and maintaining social bonds with others, people often use their own beliefs about how other people see them to do so, also known as metaperceptions. However, the accuracy of those metaperceptions and whether or not it leads to better relationships with others, is a topic that warrants study. Previous studies have demonstrated that there is often a consequence of having accurate metaperceptions, because though people like those who have accurate perceptions about themselves better, individual tend to enjoy their relationships when they assume that the other person sees them in more desirable ways and therefore have potentially inaccurate metaperceptions. Carlson (2016) examined how individual's accuracy of their metaperceptions is linked with the quality of their relationships. To do this, the accuracy of the metaperceptions of both the target individual and the other person in the relationship (new acquaintance, peer, friend, or romantic partner) were measured. The results of this study indicated that the other person in the relationship enjoyed the relationship with the target individual more when the individual knew the impressions that they made, regardless of whether or not the other person in the relationship judged that impression as desirable. Although accurate metaperceptions were also found to predict greater relationship quality over time, the target individuals enjoyed the relationship more when they believed that the other person judged them in more

positive ways. These results demonstrate that whomever is judging the individual seems to value accuracy of metaperceptions more highly, because the target individual does not benefit as much from that accuracy (Carlson, 2016).

### **The Assessment of Self-knowledge**

One method of assessing for self-knowledge is to look at not only how certain others view an individual, but how a group of others interact with that individual. Interjudge agreement, also known as consensus, indicates how much certain people judging agree in a relative order of participants on a specific trait. John and Robins (1993) examined several factors that play a role in interjudge agreement on specified personality traits. The researchers hypothesized that first, agreement between an individual and a peer is typically lower than agreements between two peers. Secondly, the researchers hypothesized that when evaluating something, an individual self is biased in its judgments. In order to test these hypotheses, John and Robins (1993) tested 250 students and sorted them into 50 groups of people, where one participant was the “self”, who was rating themselves, while the other four served as the peers who were rating the specific individual. The researchers used the Big Five dimensions as markers for the majority of the traits being assessed, and used a nine-point scale for the rankings. The results of the study found that agreement between the five individuals in each group was highest for the traits that were related to the Big Five dimension of Extraversion, and lowest for Agreeableness. They also found that four factors were responsible for this: which Big Five dimension the trait was representing, how observable the

behaviors that are being ranked are, how evaluative in nature the specific trait examined is, and whether the target individual, or “self”, is one of the judges. It was found that more observable traits and the ones that were less evaluative in nature had the highest interjudge, indicating that participants relied on their observational abilities in order to make determinations of other’s personalities.

The present study presents a somewhat different methodology for arriving at a measure of self-knowledge, which relies upon a well-known objective measure of personality. It might be instructive to first examine two of the more known and well researched measures of personality.

### **Measures of Personality**

If the research notes that objective measures that are specific and neutral are important traits to have when assessing someone’s self-knowledge, what measures can be effectively used in order to quantify the knowledge of the traits being examined? In much of the literature, there are two specific, objectives tests that are frequently used in order to measure the facets of one’s personality. The NEO Personality Inventory-3 (NEO-PI-3) and the 16 Personality Factor Questionnaire, 5<sup>th</sup> Edition (16PF) both correspond to the Big Five Model of personality, and examine specific domains and factors related to personality that can be measured across people.

#### **The NEO-PI-3.**

The NEO-PI-3 is a comprehensive measure of the five major domains of personality according to the Five-Factor Model, whose factors include Neuroticism,



Extraversion, Openness to Experience, Agreeableness, and Conscientiousness (Costa & McCrae, 2010). The test consists of 240 personality items, as well as one validity item, and each of the items loads onto the various scales and subscales. The age range for administration of this test is 12-99 years, and it takes about 30-40 minutes to administer to a participant. Each of the five factors is examined, but the measure also includes six facet scores for each of the main five factors that examine and define specific underlying traits for each of the domains. For the Neuroticism scale, the six facet scales measure Anxiety, Angry Hostility, Depression, Self-Consciousness, Impulsiveness, and Vulnerability. For the personality factor of Extraversion, the six facet scales that make up the global scale are Warmth, Gregariousness, Assertiveness, Activity, Excitement-Seeking, and Positive Emotions. For Openness to Experience, the six facet scales include Fantasy, Aesthetics, Feelings, Actions, Ideas and Values. The fourth factor, Agreeableness, is comprised of Trust, Straightforwardness, Altruism, Compliance, Modesty, Tender-Mindedness. Finally, the fifth factor of Conscientiousness has six scales that include Competence, Order, Dutifulness, Achievement Striving, Self-Discipline, and Deliberation (Costa & McCrae, 2010).

On the NEO-PI-3, both high and low scores on each of the five factors, as well as the subscales for each of those factors, have interpretable personality insights for both high and low scores. For example, those with high scores on the global factor of Neuroticism are individuals who have a tendency to experience negative emotions, such as fear, sadness, embarrassment, anger, guilt, and disgust,

whereas those with low scores on this scale are emotionally stable, calm, even-tempered, and relaxed. Though this test examines more personality facets than its counterpart, the 16PF, it has not utilized for creating the SAPP score because of the lack of ability for the test-taker to be able to predict his or her scores on the profile sheet printout. What the score report for the NEO-PI-3 does include are the scales, t-scores, and percentiles for the examinee's results, as well as an interpretive guide to interpreting what the high and low scales indicate in regards to the person's personality (Costa & McCrae, 2010). Furthermore, and unlike the 16PF, the NEO's facet scores have not been derived empirically; rather they have been identified through theoretical propositions.

#### **The 16-PF, Fifth Edition**

The 16PF was initially published in Raymond B. Cattell 1949 as an objective measure of personality, and is currently in its fifth edition. The test consists of 185 items of which 10 to 15 items load onto each primary factor, as well as five global factors, which allow for assessments of the dimensions of the individual's personality (Russell & Karol, 1994). The five global factors are factor analytical derivatives of the primary factors. The 16PF also includes three validity scales, which are used in order to examine the attitudes of the test-taker towards the test, as well as identify various response patterns used by the examinee (Karson, Karson, & O-Dell, 1997). The 16 personality prime factors on the 16PF are: Warmth (A), Reasoning (B), Emotional Stability (C), Dominance (E), Liveliness (F), Rule-Consciousness (G), Social Boldness (H), Sensitivity (I), Vigilance (L),

Abstractedness (M), Privatness (N), Apprehension (O), Openness to Change (Q1), Self-Reliance (Q2), Perfectionism (Q3), and Tension (Q4) (Karson, Karson, & O'Dell, 1997; Russell & Karol, 1994). The five global factors include Extraversion (EX), Anxiety (AX), Tough-Mindedness (TM), Independence (IN), and Self-Control (SC).

On the 16PF profile sheet given to the examinee to reveal their scores, there are certain adjectives on either side of the ten-point continuum that describe characteristics of the person who falls on either extreme side of the continuum. The profile sheet that demonstrates this can be found in Appendix A. What follows are brief interpretations for the 16 personality factors and the five global factors. The first factor, A, is Warmth, and describes the degree to which an individual is oriented emotionally towards other people. People who score high on this factor are likely to be described as warm, outgoing, and attentive to others, and are therefore likely to hold more interest in people and feel comfortable in close relationships with others. On the other hand, those who score low on this factor tend to be more reserved, impersonal, and distant. Factor B, Reasoning, examines an individual's ability to recognize abstract concepts and thinking patterns. Those who score higher on this factor are more likely to be abstract thinkers, whereas lower scores indicate more concrete thinking styles. Instead of being questions relating to personality, the items that load onto this factor consist of puzzles that require abstract thinking (Karson, Karson, & O'Dell, 1997; Russell & Karol, 1994).

The third factor is C, Emotional Stability, which addresses examinees' ability to cope with the challenges they face in their daily lives, as well as their internal struggles. Individuals who score higher on this factor are better able to cope with stress in adaptive ways, and are also considered to be more mature and emotionally stable. Those who obtain lower scores on this factor tend to be more reactive and emotionally changeable. Factor E, Dominance, is argued to be more appropriately termed as "assertiveness" and appears to measure people's willingness to express themselves rather than a desire to dominate or control other people in their lives. However, those who score higher may express their opinions even when it is not an appropriate time to do so, or when they are not invited to by other people to do so. Additionally, those who score higher are more likely to have a "commanding" presence and can be more likely to attempt to subdue others to their wishes. On the other hand, those who score lower will be more deferential, cooperative, and will tend to avoid conflict (Karson, Karson, & O'Dell, 1997; Russell & Karol, 1994).

The fifth personality factor, Liveliness (Factor F), primarily measures a person's self-expression and self-control. Individuals with high scores on this scale tend to be more spontaneous and animated than those with lower scores, and like to be in more exciting settings. Lower scorers will present as more serious, restrained, and careful in their lives. Factor G, Rule-Consciousness, measures one's ability to conform to societal ideals, standards, and morals. Consequently, those who score higher on this factor are more likely to value rules and hold themselves and those

around them to higher standards than those who score lower on this scale. Lower scores also tend to include people who are expedient, and non-conforming. Social Boldness is Factor H, and it looks at an individual's likelihood to engage in sensation seeking behaviors or to seek out social contact. However, individuals on the other side, may be cautious and uncomfortable in certain social settings, or be altogether isolated and withdrawn (Karson, Karson, & O'Dell, 1997; Russell & Karol, 1994).

The eighth personality factor, Factor I, examines one's sensitivity, or sentimentality. The test developers indicate that this scale could have been referred to as "femininity", because it encompasses the common qualities associated with it. Higher scores are more likely to be empathetic, and use their sensitivity to make sense of the world around them. Lower scorers tend to rely more on logic than their emotional experiences. Vigilance, Factor L, looks at the examinee's ability to trust other people around them without suspicion as to their motives. Those who score high on this scale are more likely to be skeptical of other's intentions in their interactions, and at very high scores can even indicate hostility or anger. However, lower scores on this factor are more indicative of those who are more trusting, unsuspecting of others, and accepting (Karson, Karson, & O'Dell, 1997; Russell & Karol, 1994).

The tenth factor, Abstractedness (Factor M), looks at the way the test-taker attempts to solve problems, and which elements they examine when making decisions. High scores on this scale indicate a problem-solver who is more

abstractive and imaginative, whereas a lower scorer is more practical and solution-oriented. Factor N, Privatness, is a measure of someone's likelihood to be private versus being forthright. High scores tend to be more non-disclosing to others, guarded, and reserved, as opposed to low scorers who are generally more open, genuine, and disclosing. Apprehension (Factor O) measures the examinee's degree of worry and anxiety. It also has ties to examining the security of the person, or whether or not they experience problems with self-doubt or self-esteem. Low scorers tend to be more self-assured, while high scorers are more likely to have more worry, dread, and lower self-esteem (Karson, Karson, & O'Dell, 1997; Russell & Karol, 1994).

Factor Q1 is the twelfth primary personality factor, and it reflects individuals' openness to changes in their lives. High scores on this factor reflect a high tolerance or even preference for change, whereas low scores prefer familiar things, and are more resistant to changes in their lives. Self-Reliance (Factor Q2) measures a person's preference to work individually or in groups to complete tasks. Higher scores prefer to engage in activities that are independent, whereas lower scorers are more group-oriented, and may enjoy working in teams. Factor Q3 (Perfectionism) is correlated with a person's tolerance level for disorder. Higher scorers tend to be more organized or perfectionistic in nature, where lower scores are more tolerant of disarray or disorganization. The final primary factor, Tension (Factor Q4), refers to the level of edginess a person experiences. High scores on this scale indicate someone who is often viewed as impatient, whereas low scores

are more indicative of a person who is relaxed and patient (Karson, Karson, & O'Dell, 1997; Russell & Karol, 1994).

For the five global factors, Extraversion (EX) measures traits that are related to an individual's degree of extraversion or introversion, and is similar to the one of the Big Five Model. The second global factor of Anxiety (AX), according to the test developers, represents an individual's overall mental health or emotional adjustment. The third global factor of Tough Mindedness (TM) emphasizes the manner in which people tend to solve their problems, by often be more able to set aside their emotions. To be more specific, a higher scorer on this scale is more likely to be strategic and straightforward in solving problems. Low scorers are more in turn with their emotions, and may engage in more emotional reasoning than those who score higher. Independence (IN), the fourth global scale, examines peoples' self-determination in their cognitive processes and in their behaviors. Finally, the fifth global factor, Self-Control (SC), examines a person's ability to resist internal desires or urges (Karson, Karson, & O'Dell, 1997; Russell & Karol, 1994). Again, because of the 16PF's profile sheet and its descriptors of the 16 primary and 5 global factors, and the fact that the obtained scores for each factor are converted to Sten scores (range = 1-10, mean score = 5.5, and standard deviation =2.5), it is possible to have a person predict their scores across the 21 scales.

### **Scale of Accurate Personality Perception (SAPP)**

In order to generate the self-knowledge scores of the baby-boomer population that will be examined in this current study, the Scale of Accurate Personality Perception (SAPP) will be used. Prior to the development of the Scale of Accurate Personality Prediction as a measure of self-knowledge, however, Haight (2000) was one of the first researchers to test whether there was a relationship between people's actual and self-predicted scores for the 16 Personality Factor Questionnaire Fifth Edition (16PF 5th edition). He hypothesized that certain primary factors on the 16PF, as well as some of the global factors, would have a significant correlation between the actual and predicted scores. Namely, scales C (Emotional Stability), H (Social Boldness), O (Apprehension), and A (Warmth) as well as the global factors of EX (Extraversion) and SC (Self-Control) would have significant correlations. The results of Haight's (2000) study showed that there were significant correlations found for twenty of the twenty-one variables on the 16PF, which were further supported by paired t-tests to confirm the accuracy of the predictions. The only factor that did not have a significant correlation was factor B. This demonstrated the potential for the 16PF to be a potentially viable measure of an individual's self-knowledge (Haight, 2000).

The actual SAPP measure was first developed by Miller (2000), where she compared predicted versus obtained scores across the 16 primary and 5 global factors of the 16PF Fifth Edition for 196 respondents. The following formula was used to derive the SAPP and it involves calculating the sum of the absolute



differences between one's obtained (O) and predicted (P) scores across the 21 16PF factors, both the facet and global scales.

The formula is as follows:

$$\begin{aligned} \text{SAPP} = & \quad | \text{OSA-PSA} | + | \text{OSB-PSB} | + | \text{OSC-PSC} | + | \text{OSE-PSE} | + \\ & \quad | \text{OSF-PSF} | + | \text{OSG-PSG} | + | \text{OSH-PSH} | + | \text{OSI-PSI} | + \\ & \quad | \text{OSL-PSL} | + | \text{OSM-PSM} | + | \text{OSN-PSN} | + | \text{OSO-PSO} | + \\ & \quad | \text{OSQ1-PSQ1} | + | \text{OSQ2-PSQ2} | + | \text{OSQ3-PSQ3} | + \\ & \quad | \text{OSQ4-PSQ4} | + | \text{OSEX-PSEX} | + | \text{OSAX-PSAX} | + \\ & \quad | \text{OSTM-PSTM} | + | \text{OSIN-PSIN} | + | \text{OSSC-PSSC} | \end{aligned}$$

SAPP scores were calculated for each respondent. The resultant distribution of SAPP scores had a range of 0 to 189, with a score of 0 reflecting perfect prediction, and one of 189, the least accurate prediction possible. Miller (2000) also found that those people who were better predictors of their own personality traits (i.e., those with lower SAPP scores) were found to be more warm, abstract in reasoning, lively, sensitive, trusting of others, forthright, open to change, outgoing, and intuitive, whereas those who had more difficulty accurately predicting their own personality traits (i.e., higher SAPP scores) were characterized as more

reserved, concrete in reasoning, restrained, unsentimental, wary of others, private, traditional, introverted, and less empathic (Miller, 2000).

Mazur (2015) further investigated which 16PF primary factors best predict individuals' SAPP scores. By using the already established SAPP database of 609 participants, Mazur (2015) ran a series of regression analyses to determine which 16PF primary factors best predicted one's SAPP score. It was hypothesized that results would parallel Miller's (2000) findings and that primary factors loading on the Tough Mindedness global factor would be most likely to predict SAPP scores. Other strong predictors would include Reasoning, Tension, and Factors loading on the global factor of Anxiety, Vigilance, Apprehension, and Tension. Mazur (2015) found the best primary scale predictor for the SAPP score was Suspiciousness.

Since this first SAPP study, many studies have been completed examining the validity and reliability of the SAPP.

#### **SAPP Validation Efforts**

Hood (2001) sought to validate the SAPP score by attempting to establish convergent validity by correlating SAPP scores of participants to their scores of the Private Self-Consciousness score of the Self-Consciousness Scale (1975). Hood also took validity establishment one step further by attempting to establish discriminant validity by comparing the SAPP score with the participant's score on the Tennessee Self-Concept Scale (1964). Hood (2001) hypothesized that the SAPP Scores would have a very low and insignificant correlation with the Tennessee Self-Concept Scale, which measures one's self-esteem. Results from this study

determined that the SAPP score did not have a significant correlation with either of the two measures. Therefore, Hood (2001) concluded that the SAPP score did not measure the construct of self-reflection, however, discriminant validity was able to be established because the SAPP did not significantly correlate with a measure of self-esteem.

Since Hood (2001) was unable to effectively establish convergent validity with the SAPP score due to methodological limitations caused by having a small sample size, Glywasky (2003) replicated Hood's (2001) study in order to try to establish convergent validity of the SAPP, but used a larger sample size in order to prevent the same methodological limitations and to explore if this was what prevented convergent validity from being established. To do this, Glywasky (2003) increased the sample size of the study from 42 participants in Hood's (2001) study to 211 participants. The Private self-consciousness score of the Self-Consciousness Scale was used again in order to attempt to establish convergent validity, however, despite the increase in sample size, Glywasky (2003) was unable to find a correlation between the aforementioned score and the SAPP score. Therefore, it can be determined that the SAPP is not measuring the same construct, and may not reflect that element of accurate self-knowledge (Glywasky, 2003).

Another study that examined the validity of the Scale of Accurate Personality Prediction was a study completed by Anderson (2002) in which the validity was assessed by attempting to establish convergent validity of the SAPP with the Self-Monitoring Scale. The hypothesis was that low scores on the SAPP (i.e.

people with a greater ability to accurately predict their personality traits) would have a significant correlation with those who scored highly on self-monitoring. People who scored higher on the Self-Monitoring Scale were found in research to be more self-aware, able to manipulate their behavior to adapt to their environment, and better at interpreting other people's reactions. These individuals also engage in comparing themselves to those around them, and are more attuned to situational cues (Anderson, 2002). Individuals who possess these qualities are also those considered to be perhaps having greater self-knowledge. To test whether convergent validity could be established between these two measures, participants in the study were administered a 16PF, as well as the Self-Monitoring Scale.

On the 16PF, participants were asked to predict where they fell on each bipolar continuum of the 16 personality factors. The researcher then was able to calculate their SAPP score (Anderson, 2002). The SAPP Score was then correlated to the score that the person achieved on the Self-Monitoring Scale. However, no significant correlations were found between the SAPP scores and the Self-Monitoring Scale scores of the participants. Consequently, convergent validity was unable to be established and it was concluded that the SAPP score is not a measure of an individual's ability to be more self-aware (Anderson, 2002).

In an effort to provide construct validity for the SAPP measure, Winter (2002) compared mean SAPP scores between two groups of individuals identified *a priori* to be different in their accuracy of self-knowledge. It was hypothesized that Graduate Psychology Students (n=22) would better predict their personality traits

than Graduate Engineering Students (n=10). Results showed no significant differences in mean SAPP scores between the two groups, thus failing to provide construct validity for the SAPP measure. However, Winter (2002) identified that her primary limitation was the small sample size and that further research on construct validity for the SAPP should replicate the study using a larger sample.

Though Winter (2002) was unable to demonstrate the validity of the SAPP score through a priori validation, it was hypothesized that the greatest limitation of that study was its very small sample size. In order to reassess the goal of Winter's (2002) study, Grossenbacher (2006), using a higher number of participants, attempted to replicate the original study with the same attempted validation. To do this, Grossenbacher (2006) collected SAPP scores from students who had obtained degrees in either psychology or engineering and were practicing in their respective fields. She then tested her hypothesis that psychology graduate students and practicing psychologists as a group would be better predictors of their personality traits, which would be shown through lower SAPP scores, than the engineering graduate students and practitioners. This would offer construct validation of the SAPP as a measure of self-knowledge. In the results of the replication, there was a significant difference between the mean SAPP scores for the two different groups, with the hypothesis being supported as the psychology group obtained lower SAPP scores. Therefore, these results provided some evidence of construct validation for the SAPP, and thereby potentially supported the idea that it is a measure of self-knowledge.

Another method of testing the validity of the SAPP was completed by Afandor (2006). The aim of this study was to test the validity of the SAPP by utilizing an expert validation method. In order to assess this, the SAPP scores of individuals that were currently undergoing therapy were compared to their therapist's ratings of their degree of self-knowledge. Afandor (2006) predicted that the lower the SAPP score (greater self-knowledge), the higher the clinician's rating of the client's self-knowledge would be. When the calculated SAPP scores from the client were correlated with their therapist's prediction of their self-knowledge, however, no significant results emerged (Afandor, 2006).

Layton (2005) further tested the construct validity of the Scale of Accurate Personality by comparing obtained individuals' self-predictions of the 16PF variables with those of predictions of the individuals made by close friends. If the participants' predicted score of themselves (as reflected by their SAPP scores) were statistically related to the peer scores of them, support would be given to the SAPP's potential validity as a measure of one's self-knowledge. In order to test this hypothesis, the participants were given the 16PF, Fifth Edition, and asked to predict where on each continuum of the traits examined they believed their scores would fall (Layton, 2005). Additionally, two close friends for each of the target participants were asked to rate their respective peer on the same continua, and self-ratings versus peer ratings were then compared. For the peer ratings, a concordance measure of the two peer predictions was then calculated, and then the

concordance measures were correlated with calculated SAPP scores. A positive correlation emerged, but did not reach the necessary level of significance.

In a very similar manner, Hickey (2005) used family members instead of close friends to serve as the comparison group. Much like Layton (2005), Hickey produced findings in the desired direction, which nonetheless did not reach the needed level of significance.

In order to attempt to build upon the limitations set by the previous study, Wolf (2006) next replicated Layton's (2005) study. Again, it was hypothesized that if the SAPP did accurately measure self-knowledge, there would be a positive correlation between self and friends ratings. Although Layton's (2005) correlation yielded a positive, yet insignificant measure, which led Wolf (2006) to replicate the study in an effort to obtain a significant correlation, providing construct validity for the SAPP.

Demographics were collected for both target and peer groups, including how long the peer had known the target individual ( $m=3.74$  years), how well the peer felt they knew the target participant ( $m=7.21$ ), and how well the peer participant felt the target participant knew them (8.41). The last two measurements were derived from peer participants' ratings on a scale of 1 to 10, with 1 indicating they felt they did not know the peer well, and 10 indicating they felt the peer extremely well. Overall, SAPP scores obtained from the sample population ranged from 23 to 64, with a mean of 34.14 and a standard deviation of 7.75, and concordance measure (CM) scores calculated from the peer and target rating were

found to have a mean 34.53, with a range from 15 to 63 and a standard deviation of 10.19. Wolf's (2006) results yielded a significant Pearson correlation between SAPP scores and CM scores ( $r=.419, p <.05$ ). There also appeared to be a directional concordance between participants with lower SAPP scores, which indicates higher self-knowledge, having greater concordance with how the peers viewed them than participants with higher SAPP scores, indicating lower self-knowledge.

Since one of the limitations of the Hickey (2005) study was the small sample size used in it, Blankemeier (2007) tried to replicate it by using a larger sample size. The results of the study indicated that there was a significant correlation between participant's SAPP scores and the concordance measure. Additionally, results demonstrated that when comparing higher and lower SAPP scores on this index, a nearly significant difference emerged that showed that individuals who were better at predicting their own personality traits also had family members who predicted the traits of the individual in the same direction.

Further contributions to establishing the construct validity of the SAPP were completed by multiple researchers, who also examined the convergent validity of the SAPP with other established measures. For instance, the purpose of Pass's (2013) study was to validate the construct validity of the SAPP as a measure of self-knowledge by comparing SAPP scores with their scores on the Integrative Self-Knowledge Scale (ISKS), another and more recent purported measure of self-knowledge. Results from t-test analyses, which compared obtained test results to



standardized samples, revealed that the majority of the scores were comparable. However, findings do not support the hypothesis that SAPP measures the same construct measured by the ISKS, as SAPP scores failed to significantly correlate with the ISKS (Pass, 2013).

#### **SAPP reliability studies.**

Given that certain of the above studies have lent some support for the validity of SAPP as a measure of self-knowledge, its reliability as a consistent measure for assessing self-knowledge also was assessed. To evaluate the SAPP's reliability, Silva (2011) used the test-retest method, and derived SAPP scores from 62 subjects during their initial testing trial and again two weeks later. A Pearson correlation revealed a significant correlation between the two derived SAPP scores ( $r = .397$ ), yet it was below what is a generally acceptable test-retest correlation (Silva, 2011). Since the Silva (2011) study, three more attempts have been made to examine the test-re-test reliability of the SAPP. Hirsch (2012) replicated the Silva study, utilizing a subject pool of 58 participants with the two-week interval between the test and re-test, and arrived again at a significant correlation between the two SAPP scores ( $r = .566$ ).

Sverdlova (2012), using sample of 58 individuals and a four-week interval between the two testing sessions, arrived at a SAPP test-re-test reliability of  $r = .466$ . Finally, Elghossain (2012) had 47 subjects take and then re-take the 16PF, using a six-week interval between the two testing sessions. Her results found a quite significant correlation between the two SAPP scores ( $r = .772$ ).

Overall, since the values found in three above reliability studies are all significant, and that these SAPP reliability results are, by definition, limited by the test-retest reliabilities of the 21 separate 16PF variables that comprise the SAPP scores (Elghossain, 2012), there appears to be strong evidence at the present time for the overall test-rest reliability of the SAPP.

### **Generalizability and Replication of the SAPP**

After establishing the SAPP as a measure of self-knowledge, the generalizability of the SAPP was tested using 50 individuals who identified as Hispanic/Latino in Rodriguez's (2011) study. A t-test was conducted to compare Miller's (2000) mean SAPP score to the study's findings, which showed no significant difference. Rodriguez found it is reasonable to consider the previously obtained SAPP psychometrics are generalizable to the Hispanic/Latino population (Rodriguez, 2011).

Another researcher attempted to generalize the SAPP to Asian participants. Zeng (2015) Collected data from 36 participants who self-identified as Asian and compared data to three random samples, majority of whom identified as Caucasian, from an archival database of 609 subjects. An independent-samples t-test was conducted in order to compare the SAPP group means of the Asian sample to those of the random samples. Results from the t-test analyses revealed two out of the three random samples (#1 and #3) had no significant difference in mean SAPP scores in comparison to the Asian sample. This suggests that it is reasonable to consider the SAPP can be generalizable to the Asian population.

In order to replicate some of Miller's findings regarding the SAPP, McElligott (2014) utilized a larger database of 609 respondents. She hypothesized that differences between the 16PF standardized and obtained scores for this larger sample would have the same statistically significant differences that Miller (2000) found in her study and that the mean, standard deviation, and range of the SAPP scores would be similar to the scores obtained by Miller (2000). She also hypothesized that individuals in this sample would tend to predict their scores in the direction of perceived more favorable characteristics based on social desirability, and that the newly derived STEN scores would be the same across the two methods of determining them (McElligott, 2014). The results of one-sample t-tests showed that the majority of obtained scores for this sample were different than the ones from the normative sample, but the mean and standard deviation were similar to those obtained in Miller's (2000) study. Results indicated that individuals appeared to rate themselves as being more rule-conscious, emotionally stable, and better able to adapt than their obtained scores suggested. Lastly, STEN scores were the same across the two methods of determining them (McElligott, 2014).

Taken together, this body of research demonstrates both the validity and the reliability of the SAPP as a measure of self-knowledge and established its utilization for the present study as the measure of self-knowledge for individuals in both the baby boomer generation and a normative sample.

### **Statement of Purpose for the Present Study**

The purpose of this current study is to examine levels of self-knowledge using the SAPP within the baby-boomer generation, as compared to the rest of the population, as well as to explore the gender differences in self-knowledge among participants from the baby boomer generation. It is the hope that this research adds more information to our knowledge surrounding lifespan development, and the potential changes in self-awareness about one's personality that occur throughout the life course.

## **Methods**

### **Subjects**

The current study utilized an archival research database that was collected through numerous testing sessions with participants over close to a decade of research. At the time of this study, the database included 645 subjects comprised of college students, individuals from the community, and other professionals. In order to categorize participants as Baby Boomers, their age at the time of their participation was subtracted from the year of the data collection when they participated. Therefore, their birth year was able to be retroactively calculated, and used with the generational cutoffs to determine if they met the criteria. A variance of plus or minus one calendar year was used, to include Baby Boomers that would have missed due to their birth month. Using these calculations, 71 Baby Boomers were identified within the database. For the comparison group, the random sample function of IBM's Statistical Package for the Social Sciences (SPSS) was used to select 80 random subjects from the database. From that, any Baby Boomers that were randomly sampled were deleted from the comparison group. Of the remaining 71 randomly sampled comparison group subjects, their birth years were also retroactively calculated in order to determine if they were part of Generation X or the Millennial generation. The demographics of both groups of subjects used in this study were identified with statistical analyses using SPSS and reported in the Results section.

### **Procedure**

Approval from the Florida Institute of Technology Institutional Review Board was obtained prior to the proposal of the research. In order to identify a comparison group to compare to the Baby Boomers, a random sample of the non-Baby Boomers in the archival data set was obtained, as mentioned above. The SAPP scores and demographics were then analyzed in SPSS in order to compare the SAPP scores of the comparison group to the baby boomers' SAPP scores. The retroactively calculated birth years allowed for classification into a generational group, which allowed for some of the comparison statistics to be tested for one of the hypotheses.

In regard to originally obtaining the SAPP scores, participants were initially administered the 16PF and were provided a scoring sheet for the 16PF that was blank and did not have their scores. Participants were then asked to rate themselves and where they believed they fell on the sixteen personality factors, as well as the five global factors included on the scoring sheet. The scores were then compared to the obtained 16PF scores on each of those same sixteen factors and five global factors, and the difference between the two scores was taken. The absolute value of that difference comprised the SAPP score that is used as the measure of self-knowledge. The SAPP scores have been adjusted through a linear transformation, so that high scores now reflect higher levels of self-knowledge, and lower scores, less levels of self-knowledge.

## **Analysis**

In order to statistically analyze the differences between the self-knowledge scores of the Baby Boomer birth cohort and a comparison group taken from the rest of the sample, a one-way ANOVA was conducted in order to assess for significant differences in generational groups on the SAPP scores. To examine whether or not being a female Baby Boomer is a significant predictor of having a lower SAPP score, a multiple regression was conducted. In order to examine both the main effects and the interaction effect between birth cohort and gender, a 2x2 multifactorial ANOVA was conducted, and post-hoc analyses were run if significant effects were found. In order to assess hypotheses four through eight, independent sample t-tests were conducted to assess for the significance of the difference between the Baby Boomer average scores on the personality or global factor, and the average scores of the comparison group. Additionally, for each of those hypotheses, a correlation was conducted in order to examine the strength or weakness of the relationship between subjects' ages and the personality or global factor.

### **Hypotheses**

Based on the findings from the literature, the following hypotheses are proposed:

1. The Baby Boomer birth cohort will have significantly higher SAPP scores, indicating a greater amount of self-knowledge than the other two generations that comprise the comparison group.

2. Being a female Baby Boomer will significantly predict having higher SAPP scores than being a male Baby Boomer, indicating that female Baby Boomers have a greater level of self-knowledge.
3. There will be significant main effects and a significant interaction effect of gender and age on SAPP scores. Post-hoc analyses will reveal that females and Baby Boomers will have significantly higher SAPP scores.
4. Baby Boomers will have significantly higher scores on the 16PF personality factor of Emotional Stability (C) than those in the comparison group.
5. Baby Boomers will have significantly higher scores on the 16PF personality factor of Rule-Consciousness (G) than those in the comparison group.
6. Baby Boomers will have significantly lower scores of the 16PF personality factor of Social Boldness scores (H) than those in the comparison group.
7. Baby Boomers will have significantly lower scores of the 16PF personality factor of Openness to Change scores (Q1) than those in the comparison group.
8. Baby Boomers will have significantly higher scores on the 16PF Global Factor of Tough-Mindedness than those in the comparison group



## **Results**

### **Demographic Results**

#### **Baby Boomers**

There were 71 Baby Boomers subjects that were used in the study from the archival dataset. Of those 71 subjects, their ages ranged from 35-67 at the time of the testing, with the mean age being 50.32. The period of testing years ranged from 2000-2012. The majority of Baby Boomers were female (63.4%) and the rest were male (36.6%). The years of education of the Baby Boomers ranged from 12 years of education (High School diploma equivalency) up to 22 years of education, with the mean amount of education falling around 16 years, which is roughly a college degree. About 77.5% of the Baby Boomers used in this study reported their occupation. For those who did report, the Baby Boomers were predominantly comprised of White Collar employees (39.4%), followed by Other Unspecified employment (12.7%), Unemployed/Homemaker (8.5%), Student (7.0%), Retired (7.0%), and Blue Collar (2.8%).

Of the 71.8% of the Baby Boomers who reported a marital status, the majority were married (45.1%), or did not report their marital status (28.2%). For the rest of the Baby Boomers, they were predominantly divorced (15.5%), followed by single (7.0%), widowed (2.8%), or separated (1.4%). In regard to race and ethnicity, of the Baby Boomers the vast majority (77.5%) identified as Caucasian, followed by Hispanic (19.7%), and Asian (2.8%). Also reported for 71.8% of the Baby Boomers was their geographic location within the United States. The highest

percentage of Baby Boomers was from the Southeast (43.7%), followed by the Northeast (18.3%), Midwest (5.6%), and Southwest (4.2%).

### **Comparison group**

There were 71 people in the comparison group that were used in the study from the archival dataset. Of those 71 subjects, their ages ranged from 18-45 years at the time of testing, with the mean age of 24.52. The period of testing years ranged from 2000-2012. In regard to gender, the comparison group was nearly evenly split with 49.3% of the group being female and 50.7% being male. In regard to generational cohorts, in the comparison group the majority fell into the Millennial cohort (60.6%) followed by Generation X cohort (39.4%). The ranges of years of education were from 12 years (roughly a High School diploma) to 21 years of education. The average years of education for the comparison group was 16.23 (roughly a college degree). With regard to occupation, only seven percent of the comparison group did not report one, and the vast majority identified as students (64.8%), followed by White Collar employees (12.7%), Unspecified Other work (8.5%), Unemployed/Homemaker (5.6%), and Blue Collar (1.4%).

Of the 83.1% of the comparison group that reported a marital status, the majority of the comparison group identified as single (69.0%), followed by the 16.9% that did not report. Of the other members of the comparison group 11.3% were married, followed by divorced (2.8%). With the comparison group, there was a different racial and ethnic makeup, with the majority identifying as Caucasian (57.7%), followed by Hispanic (22.5%), Asian (9.9%), Other (8.5%), and African

American (1.4%). Also reported for 83.1% of the comparison group were their geographic origins, with the majority being from the Southeast (60.6%), followed by Northeast (9.9%), Southwest (7.0%), Midwest (4.2%), and Canada (1.4%).

### **Hypothesis 1**

For hypothesis one, a test was conducted to examine whether participant's SAPP scores would be higher, indicating more self-knowledge, if they fell into the categorization of Baby Boomer, as compared with other generations such as Generation X or Millennials. Participants were divided into three groups by their birth cohort (group 1: Generation X; group 2: Millennial; group 3: Baby Boomer). A one-way ANOVA was conducted, and the assumption of homogeneity of variances was not met (Levene's statistic = 3.18,  $p=0.45$ ). ANOVA results showed that there was not an overall significant mean difference among the three group in regard to their SAPP scores,  $F(2,139)= 0.38, p=.69$ .

Table 1  
*One-Way Analysis of Variance of Birth Cohort on SAPP scores*

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>
Between groups	2	117.02	58.51	0.38
Within groups	139	21399.47	153.95	
Total	141	21516.50		

### **Hypothesis 2**

Table 2

*Correlations between Gender & Baby Boomer Birth Cohort on Adjusted SAPP*

*Score*

Variable	<i>M</i>	<i>SD</i>	1	2	3
1. Adjusted SAPP score	146.72	12.35	-		
2. Gender	1.44	0.50	-.201**	-	
3. Baby Boomers	1.50	0.50	.051	.142*	-

\*  $p < .05$ , \*\* $p < .01$

SAPP scores have a mean of 42.48 and a standard deviation of 12.35. Baby Boomers have a mean of 1.50 and a standard deviation of 0.5, because they were coded as either being a Baby Boomer or Not a Baby Boomer. Gender has a mean of 1.44 and a standard deviation of 0.50, because they were coded as either male or female. SAPP scores were significantly correlated with gender,  $r(142) = -.201$ ,  $p < .01$ . Being a Baby Boomer was also significantly correlated with gender,  $r(142) = .142$ ,  $p < .05$ .

A multiple regression was conducted to examine if whether being a Baby Boomer or a person's gender predicted the adult subjects' SAPP scores, and consequently self-knowledge. When both predictors were entered in the model at the same time, gender and being from the Baby Boomer birth cohort together explained a significant amount of the variance in SAPP scores ( $R^2 = .047$ ,  $F(2, 139) = 3.40$ ,  $p < .05$ ). Five percent of the variance in SAPP scores was accounted for by gender and being from the Baby Boomer birth cohort all together. However, only gender ( $b = -.212$ ,  $p < .05$ ) was a significant predictor of SAPP scores. These results do not support the hypothesis that being a female Baby Boomer would significantly

predict having higher SAPP scores, therefore having greater self-knowledge, than being a male Baby Boomer. However, it was found that gender was a significant predictor of SAPP scores.

Table 3

*Summary of Hierarchical Multiple Regression Analysis for SAPP Scores*

Variable	<i>R</i>	<i>R</i> <sup>2</sup>	<i>SE</i> of the Estimate	<i>b</i>	<i>SE</i>	<i>t</i>
Model 1	.216	.047	12.15			
Gender				-.212	2.08	-2.54*
Baby Boomers				.081	2.06	.964

\**p* < 0.5

### Hypothesis 3

A two-way ANOVA was conducted to examine the effects of gender and the Baby Boomer birth cohort on participants' SAPP scores. Levene's test suggests that the homogeneity of variances assumption was fulfilled,  $F(3, 138) = 1.08, p = .36$ .

There was a significant main effect for gender,  $F(1, 138) = 6.34, p < .05$ , partial  $\eta^2 = .044$ . Specifically, females ( $M = 148.90$ ) had higher SAPP scores than males ( $M = 143.92$ ), indicating greater levels of self-knowledge, due to using the adjusted SAPP scores. Being a Baby Boomer did not have a significant main effect,  $F(1, 138) = .87, p > .05$ , partial  $\eta^2 = .006$ . The interaction between gender and being a Baby Boomer was not significant,  $F(1, 138) = .024, p > .05$ , partial  $\eta^2 = .00$ . The results suggest that the hypothesis that there will be significant main effects and a

significant interaction effect of gender and age on SAPP scores was not supported. However, it was found that gender, specifically being female, did have a significant effect on participant's SAPP scores.

Table 4

*Factorial ANOVA Results of the Effects of Gender and Baby Boomer Birth Cohort on Adjusted SAPP scores*

<b>Source</b>	<b>SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>
Between	1006.75	3	335.58	2.23
Gender	942.45	1	942.45	6.34*
Baby Boomer	129.08	1	129.08	.87
Gender * Baby Boomer	3.63	1	3.63	.024
Within	20509.75	138	148.62	
Total	3078363.14	142		

\*  $p < .05$

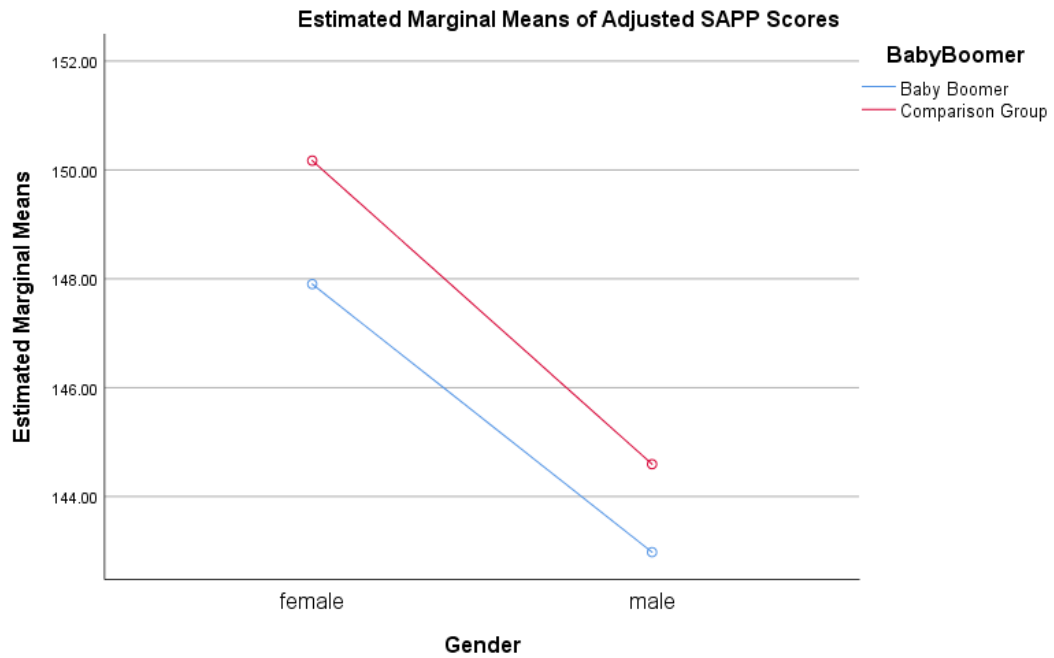


Figure 1. Analysis of Variance (ANOVA) between Gender and being a Baby Boomer on SAPP Scores

Table 5

Correlations between 16PF Personality Factors and Baby Boomer Birth Cohort

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Baby Boomer	1.50	0.50	-					
2. Emotional Stability	4.87	1.47	-.168*	-				
3. Rule-Consciousness	4.85	1.77	-.199*	.155	-			
4. Social Boldness	5.39	1.88	-.124	.322**	.033	-		
5. Openness to Change	5.60	1.86	-.057	.037	-.276**	.214	-	
6. Tough-Mindedness	5.41	1.73	0.54	.190	.260**	-.124	-.722**	-

\*  $p < .05$ , \*\* $p < .01$

For the following hypotheses, the above correlation table should be used. Baby Boomers have a mean of 1.50 and a standard deviation of 0.5, because they were coded as either being a Baby Boomer or Not a Baby Boomer. Emotional Stability scores had a mean of 4.87 and a standard deviation of 1.47. Rule-Consciousness scores had a mean of 4.85 and a standard deviation of 1.77. Social Boldness has a mean of 5.39 and a standard deviation of 1.88. Openness to Change had a mean of 5.60 and a standard deviation of 1.86. Tough-Mindedness has a mean of 5.41 and a standard deviation of 1.73. Being a Baby Boomer was significantly correlated with Emotional Stability,  $r(142) = -.168, p < .05$ . Being a Baby Boomer was also significantly correlated with Rule-Consciousness,  $r(142) = -.199, p < .05$ . Social Boldness scores were also significantly correlated with Emotional Stability,  $r(142) = .322, p < .01$ . Rule-Consciousness scores were significantly correlated with Openness to Change,  $r(142) = -.276, p < .01$ , and Tough-Mindedness,  $r(142) = .260, p < .01$ . Finally, Openness to Change is significantly correlated with Tough-Mindedness,  $r(142) = -.722, p < .01$ .

#### **Hypothesis 4**

For hypothesis four, that Baby Boomers will have significantly higher scores on the 16PF personality factor of Emotional Stability (C) than those in the comparison group, assumption tests suggested that there were no outliers in the level of Emotional Stability scores for either group. Additionally, the assumption tests suggested that the Emotional Stability scores were normally distributed for



both groups. Levene's test suggested that variances in Emotional Stability were statistically equivalent for both groups,  $F(140) = 1.57, p = .21$ .

An independent-samples *t*-test was performed to examine if Baby Boomers had significantly higher scores on the Emotional Stability (C) personality factor than those in the comparison group. Results from 142 participants (71 Baby Boomers, 71 Comparison Group) showed that Baby Boomers ( $M = 5.11, SD = 1.38$ ) had significantly higher scores on the Emotional Stability factor than those in the comparison group ( $M=4.62, SD=1.53$ ),  $t(140) = 2.02, p < .05$ , with the difference to have a 95% CI [0.11, 0.98]. The difference presented a small-sized effect, Cohen's  $d = 0.34$ . The hypothesis that Baby Boomers would have significantly higher scores on the 16PF personality factor of Emotional Stability (C) than those in the comparison group was supported.

### **Hypothesis 5**

For hypothesis five, that Baby Boomers will have significantly higher scores on the 16PF personality factor of Rule-Consciousness (G) than those in the comparison group, assumption tests suggested that there were no outliers in the level of Rule-Consciousness scores for either group. Additionally, the assumption tests suggested that the Rule-Consciousness scores were normally distributed for both groups. Levene's test suggested that variances in Rule-Consciousness were statistically equivalent for both groups,  $F(140) = 0.57, p = .45$ .

An independent-samples *t*-test was performed to examine if Baby Boomers had significantly higher scores on the Rule-Consciousness (G) personality factor

than those in the comparison group. Results from 142 participants (71 Baby Boomers, 71 Comparison Group) showed that Baby Boomers ( $M = 5.20$ ,  $SD = 1.84$ ) had significantly higher scores on the Rule-Consciousness factor than those in the comparison group ( $M=4.49$ ,  $SD=1.64$ ),  $t(140) = 2.41$ ,  $p < .05$ , with the difference to have a 95% CI [0.13, 1.28]. The difference presented a small-sized effect, Cohen's  $d = 0.41$ . The hypothesis that Baby Boomers would have significantly higher scores on the 16PF personality factor of Rule-Consciousness (G) than those in the comparison group was supported.

### **Hypothesis 6**

For hypothesis six, that Baby Boomers will have significantly lower scores of the 16PF personality factor of Social Boldness scores (H) than those in the comparison group, assumption tests suggested that there were no outliers in the level of Social Boldness scores for either group. Additionally, the assumption tests suggested that the Social Boldness scores were normally distributed for both groups. Levene's test suggested that variances in Social Boldness were statistically equivalent for both groups,  $F(140) = 0.14$ ,  $p = .71$ .

An independent-samples  $t$ -test was performed to examine if Baby Boomers had significantly lower scores on the Social Boldness (H) personality factor than those in the comparison group. Results from 142 participants (71 Baby Boomers, 71 Comparison Group) showed that Baby Boomers ( $M = 5.62$ ,  $SD = 1.81$ ) did not have significantly lower scores on the Social Boldness factor than those in the comparison group ( $M=5.15$ ,  $SD=1.93$ ),  $t(140) = 1.48$ ,  $p = .14$ , with the difference to

have a 95% CI [-.16, 1.07]. The hypothesis that Baby Boomers have significantly lower scores on the 16PF personality factor of Social Boldness (H) than those in the comparison group was not supported.

### **Hypothesis 7**

For hypothesis seven, that Baby Boomers will have significantly lower scores of the 16PF personality factor of Openness to Change scores (Q1) than those in the comparison group, assumption tests suggested that there were no outliers in the level of Openness to Change scores for either group. Additionally, the assumption tests suggested that the Openness to Change scores were normally distributed for both groups. Levene's test suggested that variances in Openness to Change were statistically equivalent for both groups,  $F(140) = 2.66, p = .11$

An independent-samples *t*-test was performed to examine if Baby Boomers had significantly lower scores on the Openness to Change (Q1) personality factor than those in the comparison group. Results from 142 participants (71 Baby Boomers, 71 Comparison Group) showed that Baby Boomers ( $M = 5.70, SD = 1.61$ ) did not have significantly lower scores on the Openness to Change factor than those in the comparison group ( $M=5.49, SD=2.08$ ),  $t(140) = 0.68, p = .50$ , with the difference to have a 95% CI [-.41, 0.83]. The hypothesis that Baby Boomers have significantly lower scores on the 16PF personality factor of Openness to Change (Q1) than those in the comparison group was not supported.

### **Hypothesis 8**

For hypothesis eight, that Baby Boomers will have significantly higher scores on the 16PF Global Factor of Tough-Mindedness than those in the comparison group, assumption tests suggested that there were no outliers in the level of Tough-Mindedness scores for either group. Additionally, the assumption tests suggested that the Tough-Mindedness scores were normally distributed for both groups. Levene's test suggested that variances in Tough-Mindedness were statistically equivalent for both groups,  $F(140) = 2.25, p = .14$ .

An independent-samples *t*-test was performed to examine if Baby Boomers had significantly higher scores on the Tough-Mindedness global factor than those in the comparison group. Results from 142 participants (71 Baby Boomers, 71 Comparison Group) showed that Baby Boomers ( $M = 5.31, SD = 1.59$ ) did not have significantly higher scores on the Tough-Mindedness factor than those in the comparison group ( $M=5.50, SD=1.86$ ),  $t(140) = -0.65, p = .52$ , with the difference to have a 95% CI [-0.76, 0.39]. The hypothesis that Baby Boomers have significantly higher scores on the 16PF global factor of Tough-Mindedness than those in the comparison group was not supported.

## Discussion

The purpose of this current study was to examine levels of self-knowledge using the SAPP within the baby-boomer generation, as compared to the rest of the population, as well as to explore the gender differences in self-knowledge among participants from the baby boomer generation. Additionally, this study aimed to examine difference in personality factors as well between the baby-boomer generation and the comparison group. What was found in this study, however, was that there was not a significant link between being a Baby Boomer and having a higher level of self-knowledge. Though multiple statistical methods were utilized, there was no correlation between the two, nor was being a Baby Boomer a significant predictor of having higher self-knowledge. It had no main effect on the variance in SAPP scores either, indicating that self-knowledge can vary throughout the life course. Though the Baby Boomer birth cohort had a significant amount of social and cultural changes throughout their lives that could have prompted self-discovery and reflection as to who they are as people, there was no evidence that it contributed significantly to having higher scores when compared to the rest of the population.

However, there were some interesting results found related to the topic of self-knowledge. Gender, specifically, identifying as a female, was both a significant predictor of SAPP scores, as well as having a significant main effect on the variance that is seen in SAPP score. In this study, women were found to have significantly higher SAPP scores than men, regardless of birth cohort, indicating

that they had greater levels of self-knowledge due to the linear transformation of the SAPP scores. This finding was the only significant finding of this study, and the only factor to demonstrate any impact on self-knowledge. Yet, there were some important results found among specific personality traits when the baby-boomer birth cohort was compared to the other group of subjects. Out of the analyses conducted, Baby Boomers scored significantly higher on personality factors C and G of the 16PF, denoting Emotional Stability and Rule-Consciousness, respectively. These results indicate that Baby Boomers were significantly more emotionally stable, adaptive, and mature than their counterparts in the comparison group, as well as more rule-conscious and dutiful.

In examining the literature referenced earlier in this document, there are some explanations within previous studies that contribute to this study's results. Loroz and Hegelson (2013) found that Baby Boomers scored significantly higher in aspects of religiosity than did the Generation Y subjects, and also reported higher levels of dispositional guilt and empathic concern than their counterparts. These factors could influence why Baby Boomer's scored higher in Rule-Consciousness and Emotional Stability, due to the inherent aspects of guidelines for life found in most religions, as well as being able to modulate one's own emotions to better empathically care for others.

Additionally, for women specifically, Kasen, Chen, Sneed, Crawford, and Cohen (2006) demonstrated that over the life-course, there is an increase in both positive feminine-linked traits such as warmth, generativity, and relatedness, as

well as positive masculine-linked traits. These factors as well could contribute to the scores seen on 16PF personality factors among Baby Boomers, since the sample group in this study was comprised of a majority of women. The traits demonstrated in previous research echo and support the characteristics of Adaptiveness, Dutifulness, and Maturity, which underscore the factors they scored significantly higher on. Also, Kasen, Chen, Sneed, Crawford, and Cohen (2006) found that women from the Baby Boomer cohort's initial marriage or remarriage, were characterized by low conflict and high marital support. Factors C and G from the 16PF can be hypothesized to contribute to stable marital relationships, and this may suggest why those results were demonstrated.

Though hypotheses such as Baby Boomers scoring significantly lower on traits such as Openness to Change and Tough-Mindedness were not supported, there is also evidence in the research as to why this is the case. Reisenwitz and Iyer (2007) described Baby Boomers as people who were a generation that grew up during the rise of mass marketing, and also saw major technological advances, such as television and then the rise of the internet. Living through these significant changes in communication and lifestyle would necessitate that someone be adaptive and constantly open to the frequently changing landscape in which they were living. In consideration the Baby Boomer cohort's lives, the results found in this study are potentially better understood, once given the context.

However, despite the significant results and support from previous research, there are some limitations to the results that could have influenced the study. One

of the predominant limitations was not having access to the archival subject's exact birth years, so it was left down to retroactive calculations in order to place them into birth cohorts. Therefore, there may have been a portion of the dataset that was not included or incorrectly included that could have an influence on the results found. Moving forward with generational research, since the year of birth is a decisive factor in determining birth cohort, it should be included within a dataset in order to avoid any incorrect categorization. Another limitation of this current study is the demographics of the Baby Boomer group used. Though the demographics are somewhat representative based on the literature, there were some notable absences that could have impacted the study's results. For example, the Baby Boomers used in the study group were predominantly female, Caucasian, college educated, White Collar employees from the Southeast. Notably absent in this group, but not in the literature, was an accurate representation of African American Baby Boomers. Additionally, Blue Collar or just high school educated Baby Boomers were also not effectively represented. Though there are clear majorities within the generation demographically, the diversity of the group needs to be adequately represented in the research about the cohort.

One of the other limitations of the research was that the subjects in the comparison group were significantly closer to the young side of the age spectrum. Due to much of the archival dataset including college-age students, the random sampling included a majority of these into the comparison group. Therefore, Generation X was not as represented, and the comparison group did not effectively



represent enough of the other birth cohorts. In future research, more specific research into the differences between the birth cohorts should be specifically looked at, and any comparison group should adequately comprise a better comparison sample that is more representative of the population.

Finally, with regard to the future of research relating to the Scale of Accurate Personality Perception, gender should be a primary focus. The notable differences in this study when examining SAPP scores was found only with regard to gender. Specifically, more research should be done to examine why females have higher levels of self-knowledge and are significantly better in perceiving their personality factors than males. Studies examining the exact differences between women on their perceived and obtained scores, and which they are better able to identify than men should be followed up with in future research in order to continue to add knowledge to why we as humans are effectively or ineffectively able to predict our own characteristics. In doing this, over time, more understanding of the knowledge of the “self” will follow, and better assist us as humans in approaching the realization of why we are able to think as we do.

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### Appendix

<b><u>Primary Factors</u></b>			
<b>Factor</b>	<b>Left Meaning</b>	<b>Standard Ten Scores (STEN)</b>	<b>Right Meaning</b>
<b>A: Warmth</b>	Reserved, Impersonal, Distant	1...2...3...4...5...6...7...8...9...10	Warm, Outgoing, Attentive to Others
<b>B: Reasoning</b>	Concrete	1...2...3...4...5...6...7...8...9...10	Abstract

<b>C: Emotional Stability</b>	Reactive, Emotionally Changeable	1...2...3...4...5...6...7...8...9...10	Emotionally Stable, Adaptive, Mature
<b>E: Dominance</b>	Deferential, Cooperative, Avoids Conflict	1...2...3...4...5...6...7...8...9...10	Dominant, Forceful, Assertive
<b>F: Liveliness</b>	Serious, Restrained, Careful	1...2...3...4...5...6...7...8...9...10	Lively, Animated, Spontaneous
<b>G: Rule-Consciousness</b>	Expedient, Nonconforming	1...2...3...4...5...6...7...8...9...10	Rule-conscious, Dutiful
<b>H: Social</b>	Shy, Threat-sensitive, Timid	1...2...3...4...5...6...7...8...9...10	Socially Bold, Venturesome, Thick-skinned
<b>I: Sensitivity</b>	Utilitarian, Objective, Unsentimental	1...2...3...4...5...6...7...8...9...10	Sensitive, Aesthetic, Sentimental

<b>L: Vigilance</b>	Trusting, Unsuspecting, Accepting	1...2...3...4...5...6...7...8...9...10	Vigilant, Suspicious, Skeptical, Wary
<b>M: Abstractness</b>	Grounded, Practical, Solution- Focused	1...2...3...4...5...6...7...8...9...10	Abstracted Imaginative, Idea- Oriented
<b>N: Privatness</b>	Forthright, Genuine, Artless	1...2...3...4...5...6...7...8...9...10	Private, Discreet, Non- disclosing
<b>O: Apprehension</b>	Self-assured, Unworried, Complacent	1...2...3...4...5...6...7...8...9...10	Apprehensive, Self- Doubting, Worried
<b>Q1: Open to Change</b>	Traditional, Attached to Familiar	1...2...3...4...5...6...7...8...9...10	Open to Change, Experimenting
<b>Q2: Self-Reliance</b>	Group- oriented, Affiliative	1...2...3...4...5...6...7...8...9...10	Self-Reliant, Solitary,

			Individualist ic
<b>Q3: Perfectionism</b>	Tolerates Disorder, Unexacting Flexible	1...2...3...4...5...6...7...8...9...10	Perfectionist ic, Organized, Controlled
<b>Q4: Tension</b>	Relaxed, Placid, Patient	1...2...3...4...5...6...7...8...9...10	Tense, High Energy, Impatient, Driven

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**Global Factors**

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<b><u>Factor</u></b>	<b><u>Left Meaning</u></b>	<b><u>Standard Ten Scores (STEN)</u></b>	<b><u>Right Meaning</u></b>
<b>EX: Extraversion</b>	Introverted, Socially Inhibited	1...2...3...4...5...6...7...8...9...10	Extraverted, Socially Participating
<b>AX: Anxiety</b>	Low Anxiety, Unperturbed	1...2...3...4...5...6...7...8...9...10	High Anxiety, Perturbable
<b>TM: Tough- Mindedness</b>	Receptive, Open- Minded Intuitive	1...2...3...4...5...6...7...8...9...10	Tough- Minded, Resolute, Unempathetic
<b>IN: Independence</b>	Accommodating, Agreeable, Selflessness	1...2...3...4...5...6...7...8...9...10	Independent, Persuasive, Willful
<b>SC: Self-Control</b>	Unrestrained, Follows Urges	1...2...3...4...5...6...7...8...9...10	Self- Controlled, Inhibits Urges

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