AGE-RELATED STIGMA AND THE GOLDEN SECTION HYPOTHESIS

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By

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# ACKNOWLEDGEMENTS

TABLE OF CONTENTS

ABSTRACT

The present study used the golden section hypothesis to examine age-related identities.

The golden section hypothesis predicts that people will organize incoming information in

a ratio-type pattern. When rating phenomena on bipolar constructs, people assign others

to the positive pole of the constructs 61.8% of the time and to the negative pole the

remaining 38.2% of the time. The present study predicted that people would rate

identities of the aging population in accordance with a reverse golden section hypothesis.

That is, people would assign negative ratings 61.8% of the time and positive ratings

38.2% of the time. Approximately 148 surveys were analyzed. Along the top of the

golden section survey were 15 identities: *child, elderly person, grandparent, middle-aged*

*adult, nurse, musician, adolescent, senior citizen, business person, lawyer, secretary,*

*mental patient, homeless person, retired person,* and *self.* Along the left side of the

survey were 12 adjective pairs: *generous-stingy, pleasant-unpleasant, true-false, fair-*

*unfair, active-passive, energetic-lethargic, sharp-dull, excitable-calm, strong-weak, bold-*

*timid, hard-soft,* and *rugged-delicate*. Results indicated that *elderly person* and *senior*

*citizen* were rated in a manner consistent with the reverse golden section hypothesis. In

keeping with previous findings, the *self* was rated positively precisely 71% of the time

while combined ratings of the remaining identities were consistent with the traditional

golden section hypothesis. Finally, it was hypothesized that *mental patient* and *homeless*

*person* together would produce a reverse golden section hypothesis, but this hypothesis

was not supported. Findings shed light on society's power to influence thought. Because

American society has coupled aging with stigma, people have come to associate

erroneous interpretations with certain age-related terms.

INTRODUCTION

The present study examined the golden section hypothesis in an attempt to understand better the implications of ageism. The golden section hypothesis suggests that people follow a consistent blueprint of cognitive organization when interpreting sensory information. The golden section hypothesis has indicated that people assign adjectives to phenomena in an asymmetrical fashion, assigning positive adjectives 61.8% of the time and negative adjectives 38.2% of the time. However, recent research has suggested that when considering stigmatized identities, a reverse golden section pattern results, with negative adjectives being assigned 61.8% of the time and positive adjectives 38.2% of the time. The present study investigated whether people interpreted identities associated with old age in a reverse golden section pattern. Findings indicated that a reverse golden section was indeed utilized when rating certain age-related terms. Implications for the findings are discussed with regards to cultural values, stigma, and labels associated with old age.

Ageism Literature

*General Information*

Butler (1969) was the first to coin the term *ageism,* which has also been described as the "ultimate prejudice" (Angus & Reeve, 2006, p. 139). Ageism constitutes negative attitudes and behaviors directed at a specific age group. Although ageism exists among all age groups, the focus of the present paper is its prevalence among the aging population (65+). Butler (1969) described ageism as an "uneasiness" or "distaste" for growing old (p. 243). The concept of "growing old" has been falsely associated with drastic decline and disability. The truth of the matter is, aging follows a path

contradictory to what people believe. Extensive research has documented only minor age-related changes in normal functioning (Carman, 1997; Field, Schaie, & Leino, 1988; Foster, 2006; Minkler, 1990; Riegel & Riegel, 1972). Nevertheless, people have the tendency to view the aging population through a distorted lens. Three important factors related to ageism are highlighted: 1) ageism as a consequence of society and culture, 2) old age as a stigmatized identity, and 3) the influence of labeling in the creation and maintenance of age-related stigma.

*Ageism as a Consequence of Society and Culture*

Ageism is a product of society (Angus & Reeve, 2006; Mautner, 2007; McConatha, Hayta, Rieser-Danner, McConatha, & Polat, 2004; McConatha, Schnell, Volkwein, Riley, & Leach, 2003; Nelson, 2002; Palmore, 1990; Stone, 2003; Thomas & Shute, 2006; Yang, Kleinman, Link, Phelan, Lee, & Good, 2007). Accumulated views stem from deep-rooted beliefs, influenced by social, political, and economic factors (Angus & Reeve, 2006; Thomas & Shute, 2006). In order to understand ageism in this society, one must examine American cultural values. First, American society emphasizes youth and beauty. Saucier (2004) stated that "youth is worshipped" (p. 420) in this society, and its prevalence is associated with power and acceptance. The media, magazines, and advertisements are partially responsible for this obsession (Nelson, 2002; McConatha et al., 2004; McConatha et al., 2003; Robinson, Gustafson, & Popovich, 2008; Saucier, 2004). These sources of information unconsciously feed on youthful-looking skin, healthy hair, and muscular or toned physiques. Consequently, visible signs of aging (e.g., wrinkles, gray hair, weight gain, etc.) do not support these values. As a result, the aging population is viewed as less adequate. Aging women feel especially

compelled to remain young and beautiful in American society. Saucier (2004) attributes this finding to the underrepresentation of older women in television. When cultural values are dispersed in such a manner, people begin to generate an overall detest for growing old.

Montepare (2006), for example, investigated the impact of a youth-obsessed culture on younger adults, middle-aged adults, and older adults. Each age group was asked to fill out a number of questionnaires that measured body consciousness, self-esteem, and anxiety towards aging. Results indicated that older adults, compared to younger and middle-aged adults, were more likely to be anxious about their physical appearance. For women in particular, a marked connection was found between anxiety towards aging and the likelihood of being body conscious. This suggests that cultural values associated with youth and beauty have the power to impact how people judge themselves in the aging process. As a result, aging is no longer a time of acceptance and positive reflection, but a time of profound unease for growing old. In addition to youth and beauty, additional American cultural values have fueled ageism, and have further alienated older people from society.

The Industrial Revolution (Nelson, 2005), the Reformation (Tornstam, 1992), and modernization (Zebrowitz & Montepare, 2000) have influenced American social structure. These historic events have positioned workforce participation, financial and economic contribution to society, income capacity, job status, economic productivity, and work-related performance at the top of the spectrum. Similar values remain dominant today (Angus & Reeve, 2006; Stone, 2003). Angus and Reeve (2006) define productivity, a significant cultural value, as "economic potential linked to capital investment and

workforce participation" (p. 141). In other words, people are viewed as productive primarily when income is generated and workforce participation is established. Creation of these values has become especially taxing for the aging population. For example, mandatory retirement has inadvertently forced older people out of the workforce. Without work, one is less likely to generate income and more likely to be viewed as lazy and unproductive. Hence, a barrier is constructed between the aging population and mainstream society, and ageism is reinforced. Ageism not only prevails in American society, but in other countries as well. A few examples are discussed below.

A study by McConatha et al. (2004) demonstrated the influence of American and Turkish cultural values on aging. Although each country maintains contrasting values, inhabitants of both societies experienced a fear and anxiety towards aging. Turkish citizens, for example, were more psychologically concerned about aging than Americans. This was explained by Turkey's present economic crises to which older people were deemed responsible (McConatha et al., 2004). In contrast, United States citizens were more concerned with the physical changes of aging, perhaps as a result of the pressure to remain young and beautiful (McConatha et al., 2004). Different cultural values have the ability to evoke different forms of ageism.

A second study also documented the influence of society and culture on anxiety towards the aging process. McConatha et al. (2003) surveyed a number of young adults in Germany and the United States. Findings indicated that women (as opposed to men), in both countries, were more likely to fear the physical signs of aging. This may be a result of the emphasis that both Germany and the United States place on female youth and beauty (McConatha et al, 2003).

In summary, ageism is a socially constructed concept. Imbedded cultural values, societal pressures, and past and present circumstances have the power to influence one's interpretation of others. Specifically, a number of cross-cultural values and pressures have managed to distinguish the aging population from the rest of society. In America, for example, visible age-related changes and reduced participation in the workforce have encouraged people to construct damaging views of the aging population.

*Old Age as a Stigmatized Identity*

The term *stigma* covers a broad range of definitions. Stigmatizing thoughts are considered "abnormal" and "atypical" as defined by society (Luken, 1987; Thomas & Shute, 2006; Yang et al. 2007). A stigma is attached when incoming information defies one's expectations. It is often negative in nature (Biernat & Dovidio, 2000) and further associated with "deviance" and "devalue" (Goffman, 1963; Jones, Farina, Hastorf, Markus, Miller, & Scott; Yang et al, 2007). Various phenomena have the potential to possess stigma (e.g., individuals, places, circumstances, experiences, etc.). Stigmatized individuals, for example, appear to be "flawed, compromised, and somehow less than fully human" (Dovidio, Major, & Crocker, 2000, p. 3). Previous research has indicated that the aging population does indeed embody a stigmatized identity (Hill, von Mering, & Guillette, 1995; Hugman, 2001; Lima, Levav, Jacobsson, & Rutz, 2003; Luken, 1987; Thomas & Shute, 2006) as well as a number of stereotypes.

Attaching a stigma to an identity provides a basis for stereotypes to prevail. Stigma becomes especially taxing when people become dependent on these stereotypes for awareness. For example, Biernat and Dovidio (2000) conducted interesting research examining the bidirectional effects of stigma and stereotyping. When people display

attributes that conflict with mainstream society, a stigma is attached. As a result, they are

grouped into social categories. Society then generates broad assumptions or "stereotypes"

in response to these categories (Biernat & Dovidio, 2000). Stereotypes "influence how

people perceive, process, store, and retrieve information" (Biernat & Dovidio, 2000, p.

99). Hence, people are more likely to interpret information regarding the population in a

manner consistent with their generalizations, no matter how fabricated the stereotypes

are. Older people, for example, have been stereotyped as "severely impaired" (Hummert,

1990), "unproductive" (Lehr, 1983), "disagreeable' (Sorgman & Sorensen, 1984),

"dependent" (Palmore, 1990), "vulnerable" (Schmidt & Boland, 1986), "fragile" (Stone,

2003), and "needy" (Luken, 1987). Stereotypes such as these are rarely representative of

the actual population.

Stigma is not inherent in the aging population. Luken (1987) postulated that age-

related stigma occurs as a result of situational factors. In other words, specific situations

have the potential to generate stigma in the aging population. For example, older people

are especially stigmatized when they encounter situations that require demanding

physical or mental tasks (e.g., strenuous exercise, driving, etc.) (Luken, 1987). For

example, physical signs of aging may potentially make strenuous exercise difficult.

Additionally, declines in the acuity of senses (which is common among the aging) may

make driving difficult. A second situation that has the potential to increase stigma among

the old involves the use of chronological age as a pivotal marker (Luken, 1987).

Retirement, senior discounts, and life insurance policies, for example, all utilize

chronological age as a marker for discrimination. When the aging population is

distinguished from mainstream society in this way, they are likely to experience the

implications of stigma. In summary, many situations generate age-related stigma. Luken (1987) provides only one explanation as to *why* age-related stigma exists. A number of other explanations are described below.

Age-related stigma may not result from situational factors, but from drastic changes occurring in the body and mind (Hill et al., 1995). Hill et al. (1995) suggest that these factors tend to distinguish adolescent and older identities from other populations. Zebrowitz and Montepare (2000) offer a similar explanation. First, people are often stigmatized in old age based by their appearance (Zebrowitz & Montepare, 2000). At this time, people are likely to display highly visible physical changes (e.g., wrinkles, gray hair, weight gain, sagging skin, etc.). Additionally, older people also display changes in social interaction (Zebrowitz & Montepare, 2000). For example, reduced acuity of the senses and declines in working memory may potentially inhibit constructive social interaction. The aging process entails a number of changes in the mind and body, and these changes influence one's interpretation of age-related information. Building from previous explanations, Goffman's (1963) definition of stigma may also provide evidence as to *why* age-related stigma prevails.

Goffman (1963) documented three types of stigma: 1) "abominations of the body" (e.g., physical deformities), 2) "blemishes of individual character" (e.g., unemployment), and 3) "tribal identities" (e.g., race, sex). Although Goffman's (1963) definition was not directed at any specific stigmatized identity, old age may be better understood by his definition. For example, "abominations of the body" may be associated with the visible signs of aging (e.g., wrinkles, gray hair, etc.). "Blemishes of individual character" may be associated with decreased workforce participation among the aging population. Finally,

"tribal identities" may be associated with the general stigma attached to *age*. This provides further evidence as to why older people are stigmatized. Although there is controversy over *why* the stigma exists, there is no doubt that it prevails. One way that it is created and maintained is through labeling, which is discussed next.

*Age-Related Stigma and Labeling*

Age-related labels play an extremely important role in the prevalence of stigma and ageism. Age-related labels have the power to create and maintain the stigma associated with old age (Mautner, 2007; Nelson, 2002, 2005; Nussbaum, Pitts, Huber, Krieger, & Ohs, 2005; Nuessel, 1984; Palmore, 1999; Tornstam, 1992). Research indicates that labels associated with old age are primarily negative (Miller, Leyell, & Mazachek, 2004; Nelson, 2002, 2005; Nuessel, 1982; Schmidt & Boland, 1986). Additionally, the stereotypes associated with old age are often formed and sustained through a variety of labels (Palmore, 1999). Some of the labels carry obvious negative connotations, such as *nosy neighbor or bag lady* (Schmidt & Boland, 1986), while others appear to be less degrading, such as *elderly person, senior citizen, aged person,* and *old man/old woman* (Ward, 1979). Each label, however, carries a number of implicit connotations. Labels of all sort have the power to influence thought. The term *elderly* is an example of a label that elicits a number of additional connotations.

The term *elderly person* is associated with a number of negative connotations (Fiske, Cuddy, Glick, & Xu, 2002; Kalab, 1985; Mautner, 2007; Nuessel, 1982; Ward, 1977). Mautner (2007) conducted a study that investigated the term *elderly*. He found that words with a negative "semantic load" (p. 64) were more likely to be compatible with the term *elderly*. He further speculated that when people were considered to be

healthy or active, they were less likely to be labeled *elderly*. Some connotations associated with the term *elderly* include *disabled, frail, sick,* and *unemployed* (Mautner, 2007). Fiske et al. (2002) conducted a similar study concerning the use of the term *elderly*. A number of subjects were asked to rate different groups on *warmth* and *competence*. Findings indicated that the *elderly people* group was associated with perceived characteristics high in warmth and low in competence. Interestingly, this group was rated in a manner similar to the *retarded* and *disabled* groups. Kalab (1985) also conducted an interesting study. She investigated ageist labels in a number of textbooks. Kalab (1985) found that the term *elderly* was utilized in chapters that stressed negative circumstances for older people, such as inequality. Although the term does not appear to be explicitly dangerous, it carries a number of negative connotations that consequently maintain age-related stigma.

Although aging research remains in its initial stages, a number of contributions have been made. Ageism is a product of society and older people have experienced the brunt of the inequality. Their identity is extremely susceptible to stigmatization. The stigma is potentially sustained through age-related labels that carry negative connotations. As a result, ageism has become second nature to people, and interpreting age-related information in stigmatizing ways has become both automatic and unconscious (Angus & Reeve, 2006; Butler, 1969; Chasteen, Schwarz, & Park, 2002; Nelson, 2005; Perdue & Gurtman, 1990; Tornstam, 1992). The next section calls attention to a robust cognitive process that people utilize to make sense of incoming information. When people lack extensive exposure to new information, they follow a default pattern of thought processing (Adams-Webber, 1977, 1978; Benjafield & Adams-Webber, 1976;

Raskin, Harasym, Mercuri, & Widrick, 2008). This pattern is known as the golden section hypothesis. The hypothesis indicates that when lacking information to inform their opinion, people attach attributes that are primarily positive to the people they are construing. A reverse golden section hypothesis has also been documented (Raskin et al., 2008). In the present study, it is hypothesized that a reverse golden section hypothesis will occur when people are asked to conceptualize those stigmatized by old age.

<div align="center">Golden Section Hypothesis Literature</div>

*General Information*

The golden section hypothesis explains how people interpret events, activities, identities, and experiences (Lee, 2006). When asked to rate phenomena on dimensions with established positive and negative poles, people tend to select the positive poles 61.8% of the time and the negative poles 38.2% of the time. Positive and negative ratings do not necessarily convey that the information is "good" or "bad." According to Osgood and Richards (1973), negative and positive are associated with the ancient Chinese constructs of Yin and Yang, respectively. Positive adjectives are believed to have entered the language first and were found to have occurred more frequently in the language than negative adjectives (Benjafield & Adams-Webber, 1976). This suggests that positive ratings are simply a background against which negative ratings are highlighted (Benjafield & Adams-Webber, 1976).

The golden section hypothesis is extremely robust and has been documented in a number of studies (Adams-Webber, 1977, 1978; Benjafield & Adams-Webber, 1976; Benjafield & Green, 1978; Benjafield & Pomeroy, 1978; Pomeroy, Benjafield, Rowntree, & Kuiack, 1981; Raskin et al., 2008). The consistent recurrence of the golden section

pattern in rating others is said to be an automatic and unconscious thought process

(Crowley, 1991; Lefebvre, Lefebvre, & Adams-Webber, 1986). It has even been posited

that the golden section hypothesis' repeated confirmation implies that the mind contains

an "algebraic processor" for organizing information (Lefebvre et al., 1986). Additionally,

Crowley (1991) suggests that human beings may be "naturally optimistic" in their

interpretations of information. As people take in information, they immediately and

instinctively process it in a manner consistent with the golden section ratio. Organizing

information according to the golden section hypothesis provides an efficient and fast-

paced processing mechanism for making sense of phenomena.

*The Golden Section Hypothesis: "Typical" and "Atypical" Research*

Benjafield and Green (1978) discussed "typical" and "atypical" populations in

reference to the golden section hypothesis. They postulate that "typical" and "atypical"

descriptions may in fact apply to the adjectives that people use to rate others. "Typical"

populations are assigned ratings that parallel the golden section hypothesis (61.8%

positive: 38.2% negative) while "atypical" populations are assigned ratings that parallel

the reverse golden section hypothesis (38.2% positive: 61.8% negative; Benjafield &

Green, 1978). Hence, what one perceives as "atypical" shifts from figure to ground. This

inverts the traditional golden section hypothesis.

*The Reverse Golden Section Hypothesis: Age-Related Stigma*

The golden section hypothesis postulates that when people interpret information,

such as identities, they have the tendency to highlight a limited amount of negative

information against a larger background of positive information. Ageism, as previously

discussed, is often directed at the aging population and primarily constitutes negative

information. In the present study, an effort was made to examine age-related identities utilizing the golden section hypothesis. Because the aging population is considered to be a stigmatized identity, it is deemed "atypical" as indicated by Benjafield and Green (1978). It might then be hypothesized that identities associated with old age are likely to elicit a reverse golden section hypothesis. It is important to note that only one study has documented the presence of a reverse golden section ratio (Raskin et al., 2008). The reverse golden section hypothesis was found when rating two stigmatized identities (*homeless person* and *mental patient*). Consequently, if age-related stigmatized identities are presented in the same manner, it seems plausible to hypothesize that they, too, will produce a reverse golden section hypothesis. This led to Hypothesis 1.

*Hypothesis 1*. It was hypothesized that four old-age identities (*retired person, elderly person, senior citizen,* and *grandparent*) would together produce a reverse golden section pattern. Hence, the identities would be assigned to the positive pole of bipolar constructs 38.2% of the time and the negative pole of bipolar constructs 61.8% of the time.

*The Golden Section Hypothesis: Self-Ratings*

Not only is the golden section hypothesis consistent when rating experiences, identities, and activities, but also it is consistent when people are asked to rate themselves. When asked to rate themselves, people tend to provide ratings that are more positive than the golden section ratio implies (Badesha & Horley, 2000; Lee & Adams-Webber, 1987; Lefebvre et al., 1986; Raskin et al., 2008). In their mathematical model, Lefebvre et al. (1986) indicated that people typically rate themselves with positive adjectives 71% of the time. Raskin et al. (2008) replicated these findings. They asked

12

undergraduate students to rate themselves on 12 bipolar constructs and found almost identical results (.706) to the mathematical model developed by Lefebvre et al. (1986).

*Hypothesis 2.* The second hypothesis attempted to replicate these findings. The second hypothesis indicated that participants would rate themselves on the positive pole of the golden section grid approximately 71% of the time.

*The Golden Section Hypothesis: Rating Additional Phenomena*

The golden section hypothesis has been found when rating acquaintances (Adams-Webber, 1977; Benjafield & Adams-Webber, 1976; Benjafield & Green, 1978), unfamiliar faces (Benjafield & Pomeroy, 1978; Pomeroy et al., 1981), and imaginary persons with nonsense names (Adams-Webber, 1978). The golden section hypothesis and the research affirming it suggest that the mind uses a consistent blueprint for organizing cognitive information.

*Hypothesis 3.* The third hypothesis postulated that participant ratings for non-stigmatized age-related and non-age-related identities (*child, adolescent, middle-aged adult, business person, lawyer, secretary, nurse,* and *musician*) would together produce findings consistent with the golden section hypothesis.

*The Reverse Golden Section Hypothesis: Other Stigmatized Identities*

As indicated, Raskin et al. (2008) provided evidence that people use a reverse golden section ratio in rating stigmatized identities. Within their study, undergraduate college students were asked to rate two stigmatized identities (*homeless person* and *mental patient*). Results indicated that *homeless person* and *mental patient* together were assigned positive adjectives 39.7% of the time. This percentage was not statistically

different from the reverse golden section mean of 38.2%. Consequently, the present study

attempted to replicate this finding.

*Hypothesis 4.* The final hypothesis held that *homeless person* and *mental patient*

together would be rated in a manner consistent with the reverse golden section

hypothesis.

METHOD

Participants

All participants were students from the State University of New York at New Paltz. The SUNY New Paltz community was emailed a link to Survey Monkey, an online data-collecting method that allowed them to proceed to the three surveys. Over 550 participants registered or began the survey. However, only completed surveys were included in the analyses. A demographic survey indicated that of the remaining 148 participants, 115 were female, 32 were male, and 1 did not indicate a gender. The ethnicity of the participants was as follows: 7 Asian/Pacific Islander, 4 Black/African American, 7 Latino/Hispanic, 5 Multiracial, 121 White/Caucasian, 1 Caucasian with some Native American, 1 other, and 2 indicating no answer. The mean age was 23.23 years old ($SD = 7.16$). The researcher also chose to assess the participants' present views of the aging population. In order to accomplish this, the Fraboni Scale of Ageism (FSA; Fraboni, Saltstone, & Hughes, 1990) was administered. The scale is currently identified as the most complete measure of ageism to date (Kalavar, 2001; Rupp, Vodanovich, & Crede, 2005; Stuart-Hamilton & Mahoney, 2003). It consists of 29 items on a 4-point Likert Scale (*strongly disagree, disagree, agree,* and *strongly agree*). The responses were coded on a scale of 1 through 5. Questions that were not answered were coded as a 3. Each participant score fell between 29 (lowest possible score) and 145 (highest possible score). A total score was then calculated for each participant and averaged into one total score. In the present analysis, the mean ageism score was then compared to other FSA scores in previous studies in order to obtain a general sense of participant ageism. It is important to note that the scale was utilized solely as a descriptive statistic.

*Golden Section Survey Grid*

The online survey instrument was modeled after one developed initially by Lee and Adams-Webber (1987). Along the top of the survey, 15 total identities were rated: *child, elderly person, grandparent, middle-aged adult, nurse, musician, adolescent, senior citizen, business person, lawyer, secretary, mental patient, homeless person, retired person,* and *self.* Along the left side of the survey were 12 adjective pairs: *generous-stingy, pleasant-unpleasant, true-false, fair-unfair, active-passive, energetic-lethargic, sharp-dull, excitable-calm, strong-weak, bold-timid, hard-soft,* and *rugged-delicate* (See Appendix A). Each adjective pair (i.e., bipolar construct dimension) has an established positive and negative pole (the positive poles are presented first in the previous sentence). In the present study, the pairs were randomized so that the positive adjective was presented first for approximately half of the bipolar constructs and presented second for the other half. It is important to note that these adjective pairs were successfully used in several previous golden section studies (Adams-Webber, 1977, 1978; Benjafield & Adams-Webber, 1976; Benjafield & Pomeroy, 1978; Lee & Adams-Webber, 1987; Raskin et al., 2008).

Survey Administration and Scoring

*Golden Section Survey Grid*

Participants were instructed to categorize all 15 identities across the top of the golden section survey using the 12 adjective pairs. The participants were instructed to place a "1" in the appropriate survey box if they felt the first word of the adjective pair applied to the individual. If they felt the second word of the adjective pair applied to the

individual, they placed a "2" in the appropriate survey box (See Appendix A). All 15

identities were rated on all 12 bipolar adjective pairs. Data were imported into the SPSS

program, where further coding took place. During the coding process, "1" and "2"

responses were replaced with "0" and "1" responses, respectively. Data were reverse

coded when positive adjectives were presented first. A total positive rating score across

all identities for each individual was generated. Each participant could have a possible

score ranging from 0-12 positive adjectives for each identity. Hence, the total across *all*

identities on the grid ranged from 0-180. For example, if a participant rated all 15

identities on the positive pole of the bipolar construct, a score of 180 resulted. If the

participant rated all 15 identities on the negative pole of the bipolar construct, a score of 0

resulted. Percentages were then calculated by dividing total positive scores by 12 (total

adjective pairs). The percentages for each identity were averaged among all participants.

RESULTS

## General

Descriptive statistics and means for all ratings are found in Table 1. Three

additional categories (*age-related stigmatized identities, other stigmatized identities,* and

*remaining identities*) were also created in order to address the hypotheses. One-sample t-

tests were utilized to compare the mean percentages of each of the three categories to the

selected golden section or reverse golden mean percentages. Confirmation of the

hypotheses occurred when the means being tested did *not* show a statistically significant

difference from the golden section or reverse golden section means they were being

compared to.

## The Fraboni Scale of Ageism

Although a hypothesis was not developed regarding the Fraboni Scale of Ageism

(FSA), the scale was utilized as a descriptive statistic. The scale's primary purpose was to

compare the prevalence of ageism in the present study with the prevalence of ageism in

previous FSA studies. In the present study, an overall FSA mean of 61.30 ($SD = 13.51$)

was found (range = 31 to 109) along with a Cronbach's alpha coefficient of .87. These

findings are consistent with other FSA studies. For example, Fraboni et al.'s (1990)

original study found an overall FSA mean score of 57.89 ($SD = 11.86$) (range = 30 to 91)

as well as a Cronbach's alpha coefficient of .86 (mean age = 31.19 years old). Similar

means were also confirmed by Mueller-Johnson, Toglia, Sweeney, and Ceci (2007). They

distributed the FSA to a group of undergraduate students (mean age = 20.40 years old)

and found an overall FSA mean of 67.40 ($SD = 10.89$). In addition, Stuart-Hamilton and

Mahoney (2003) also distributed the FSA twice to a sample with a mean age of 42.92

years. One overall FSA mean score of 61.13 (*SD* = 10.45) was found while another overall FSA mean score of 58.39 (*SD* = 10.95) was found. In summary, findings indicate that participants in the present study possessed an overall score of ageism that was typical of their counterparts.

Hypothesis 1: The Reverse Golden Section and Age-Related Stigmatized Identities

Four identities (*elderly person, senior citizen, retired person,* and *grandparent*) specific to the aging population were examined. The reverse golden section hypothesis predicts that people should rate stigmatized identities using the positive poles of construct dimensions 38.2% of the time. Before analyzing the ratings given to the four age-related identities, a .50 rule was instituted to decide for which identities it was reasonable to test for the reverse golden section hypothesis. The logic of using a .50 rule is that it only makes sense to compare an identity's mean number of positive ratings to the reverse golden section mean of .382 when the mean number of positive ratings for that identity is less than .50. This makes intuitive sense given that an identity rated positively more than half the time is almost by definition not seen as stigmatized. However, assigning positive adjectives to an identity less than half of the time suggests that the identity is viewed more negatively than positively. That is, it may carry a stigma that is consistent with the reverse golden section hypothesis. Applying this rule in the present study helped determine which of the four age-related identity ratings should be averaged together and compared to the reverse golden section positive rating mean of .382. Because the percentage of positive ratings fell below .50 for *elderly person* and *senior citizen*, these two identities were averaged into an *age-related stigmatized identities* score. This score was then compared to the reverse golden section mean of .382. The score (*M* = .395, *SD*

19

= .15) was nearly identical to the reverse golden section rating of .382 and did not differ significantly from it, $t(146) = 1.01$, $p = .313$. The hypothesis was confirmed. *Retired person* ($M = .54$, $SD = .21$) and *grandparent* ($M = .58$, $SD = .17$) were not included in this analysis because their mean positive ratings fell above .50. As a result, the scores for *retired person* and *grandparent* were averaged into the *remaining identities* category, which consisted of all identities that were assigned positive ratings more than 50% of the time (see below).

Hypothesis 2: The Golden Section and Self-Ratings

As a result of previous research (Badesha & Horley, 2000; Lee & Adams-Webber, 1987; Lefebvre et al., 1986; Raskin et al., 2008), it was surmised that evaluations of the self would produce ratings slightly higher than the golden section hypothesis. More specifically, the ratings would mirror Lefebvre et al.'s (1986) prediction of .71. This hypothesis was supported, $t(146) = .713$, $p = .477$ and self-ratings ($M = .729$, $SD = .17$) did not differ significantly from Lefebvre et al.'s (1986) predicted mean of .71.

Hypothesis 3: The Golden Section and Other Identities

The third hypothesis suggested that the remaining identities (*child, adolescent, middle-aged adult, business person, lawyer, secretary, nurse,* and *musician*) would together produce a golden section ratio of .618. Recall that the researcher made the decision to also include *retired person* ($M = .54$, $SD = .21$) and *grandparent* ($M = .58$, $SD = .17$) into this category because these identities did not pass the .50 test for inclusion in the reverse golden section analysis. The mean positive rating percentage for the

remaining identities ($M = .610$, $SD = .09$) did not differ significantly from the golden

section hypothesis of .618, $t(145) = -1.10$, $p = .271$. The hypothesis was supported.

Hypothesis 4: The Reverse Golden Section and Other Stigmatized Identities

It was hypothesized that two commonly stigmatized identities (*mental patient* and

*homeless person*) would together produce a reverse golden section hypothesis. Again, the

.50 rule was applied because the combined mean for positive ratings fell below .50 for

the identities ($M = .46$, $SD = .17$). Even though the identities passed the .50 rule, this

hypothesis was not confirmed, $t(145) = 5.75$, $p = .000$. The combined mean for positive

ratings of *mental patient* and *homeless person* was however, more negative than positive

(i.e., below .50), but still significantly different from the predicted mean of .382.

## DISCUSSION

### The Reverse Golden Section and Age-Related Stigmatized Identities

The present analysis attempted to confirm the presence of a reverse golden

section hypothesis among the aging population. Findings indicated that positive

adjectives were utilized 39.5% of the time across people's ratings of *elderly person* and

*senior citizen*. This was not statistically different from the reverse golden section mean of

38.2% positive adjectives. It is interesting to note that *elderly person* (39.5%) and *senior

citizen* (39.5%) not only hit the reverse golden section rating collectively, but also

individually. Participants displayed an inverted form of cognitive processing when rating

the age-related stigmatized identities. Findings suggest that ageism, organized in a

reverse golden section ratio of negative to positive ratings, is indeed present in rating

certain age-related identities. The present findings also confirmed Benjafield and Green's

(1978) literature on "atypical" populations where stigmatized identities are evaluated in a

manner consistent with a reverse golden section hypothesis. This was found in the present study and provides empirical evidence that *elderly person* and *senior citizen* are indeed stigmatized identities. Implications for the present study are discussed in terms of age-related labels that have been constructed to maintain the stigma associated with old age.

First, *elderly person* generated a negative response from people in the present study. This finding was consistent with previous research demonstrating that the term *elderly* carries a negative connotation (Fiske et al., 2002; Kalab, 1985; Mautner, 2007). As indicated above, Mautner (2007) found words such as, *disabled, frail, sick,* and *unemployed* to be associated with the term *elderly*. Fiske et al., (2002) also found the term to be associated with low competence, and finally, Kalab (1985) found the term to be more frequent in book chapters dealing with negative circumstances. It becomes clear that present findings are indicative of the socially constructed negative connotations associated with the term *elderly*. It is likely that when participants were asked to rate the term *elderly person*, they unconsciously conjured up a number of these negative connotations.

In addition to *elderly person*, the term *senior citizen* was also found to elicit the exact same percentage of positive adjectives (39.5%). The term *senior citizen* is often associated with labels such as *senior citizen housing* and *senior citizen discount.* Each term appears to group older people into a category that receives treatment disparate from others in society. For example, although senior citizen housing assists older people with affordable, government housing, its inhabitants become isolated from the larger community (Poulin, 1984). Senior citizen communities care only for people that meet necessary age requirements. Hence, a cluster of older people are placed in a secluded

neighborhood with little contact with the outside world. Relative to this, senior citizen discount also has the power to separate the aging population from the larger community. Although seniors are benefiting from product discounts, they are once again receiving treatment that separates them from others. Day and Stafford (1997) explain that senior citizen discounts separate the economy into "young" and "old." Additionally, Tepper (1994) argues that these discounts not only influence age segregation, but also serve as a stigmatizing label for senior citizens. In summary, when participants were asked to rate the term *senior citizen*, additional expressions such as *senior citizen housing* and *senior citizen discount* may have come to mind. Such expressions may create a barrier between the aging population and the rest of society. With that said, people may be more likely to disassociate themselves from senior citizens and rate them with a majority of negative adjectives.

Interestingly, the term *retired person* did not produce a rating (54.4%) consistent with the reverse golden section hypothesis or the traditional golden section hypothesis. A retired person is a person who is no longer active in the paid workforce. Negative stereotypes have been found to parallel those who are retired (Angus & Reeve, 2006; MacGregor, 2006; Saxon & Spitznagel, 1991; Thomas & Shute, 2006). Additionally, given the importance that American society places on employment and work-related roles (Angus & Reeve, 2006; Nelson, 2002, 2005; Tornstam, 1992), it is interesting that *retired person* did not elicit more negative adjectives. Present findings might be explained by the current movement away from mandatory retirement. Presently, age of retirement varies significantly depending upon the given profession. As a result, the term *retired person* may not necessarily indicate an identity associated strictly with old age. This may have

influenced participants to rate the term impartially. Regardless, results suggest that a *retired person* label may not be stigmatizing in the same manner as *senior citizen* and *elderly person* labels are.

Lastly, the term *grandparent* was also found to elicit a majority of positive adjectives (57.7%), making it appear to be both non-stigmatizing and inconsistent with the reverse golden section hypothesis. One way to explain this finding is by considering exposure theory. Research indicates that direct and positive contact with the aging population is found to positively influence subsequent views (Caspi, 1984; Koder & Helmes, 2008; Nelson, 2002, 2005). When participants were asked to rate the term *grandparent*, they may have been unconsciously rating their own grandparent, with whom they have had a great deal of positive contact.

Aging research has also found the term *grandparent* to be interpreted differently than other age-related identities. A study by Hoe and Davidson (2002) investigated this phenomenon. The researchers utilized five types of priming words: *positive* (e.g., Cheerful), *negative* (e.g., Forgetful), *elderly* (e.g., Old Lady), *grandparent* (e.g., Granny), and *neutral* (e.g., Lamp). After presentation of one of these priming words, participants were asked to complete a number of tests. Results indicated that children in the *positive* and *grandparent* priming conditions viewed the aging population more positively than in the other conditions. Another interesting study was implemented by Burke (1981). The study found that a number of young children viewed older people as displaying negative characteristics. They viewed their grandparents, however, in a positive manner. Burke (1981) also found that the children's exposure to their grandparents was high, while their exposure to other older people was low. This likely affected their perceptions. Findings

presented by Hoe and Davidson (2002) and Burke (1981) serve as potential explanations for what was found in the present study. Participants may have rated the term *grandparent* more positively as a result of increased, positive exposure to their own grandparent.

Explanations for the present age-related findings highlight the influence of age-related labeling in society. Interpretation of information is a consequence of the labels utilized, and these labels appear to be impacted by social norms and expectations. *Elderly person, senior citizen, retired person,* and *grandparent* each carry with them distinct connotations that appear to be products of imbedded social values, attitudes, and experiences. The labels influence how one will subsequently make sense of incoming information.

Finally, it is important to further justify the use of the .50 rule in Hypothesis 1. Although the .50 rule may appear as an attempt to "stack the deck," its implementation seems substantiated when considering that all the other identities (except homeless person and mental patient, which were analyzed separately) were above .50. In the present study, *elderly person* and *senior citizen* without a doubt produced ratings that were rated in a manner quite different from the other identities. Clearly the only way identities can elicit a reverse golden section is if they are rated positively less than 50 percent of the time; thus, the decision to only test aging identities for the reverse golden section if they were rated positively less than half the time seemed reasonable.

<div align="center">The Golden Section and Self-Ratings</div>

Findings indicated that participants rated themselves more positively than the golden section hypothesis ($M = 72.9\%$). These results replicated past research (Badesha

<div align="center">25</div>

& Horley, 2000; Lee & Adams-Webber, 1987; Lefebvre et al., 1986; Raskin et al., 2008) and confirmed Lefebvre et al.'s (1986) mathematically induced hypothesis that, under general circumstances, positive self-ratings will be made 71% of the time. It becomes obvious that people have a tendency to construe themselves in a positive light. People often view themselves through a lens that is significantly more positive than how they view others.

<center>The Golden Section and Other Identities</center>

The third hypothesis tested whether the remaining identities (*child, adolescent, middle-aged adult, business person, lawyer, secretary, nurse, musician, retired person,* and *grandparent*) would support the golden section hypothesis. This hypothesis was supported. These findings support previous literature (Adams-Webber, 1977, 1978; Benjafield, 1983; Benjafield & Adams-Webber, 1976; Benjafield & Green, 1978; Benjafield & Pomeroy, 1978; Pomeroy et al., 1981), suggesting that non-stigmatized identities consistently elicit a traditional golden section rating pattern.

The results suggest that people have a distinct way of processing, organizing, and constructing information in their environment. Not only are these ratings automatic, but they are also consistent. While the precise reasons for the robustness of the golden section and reverse golden section patterns of rating others remains unknown, golden section research suggests that cognitive processing is often organized in accordance with the golden section hypothesis.

<center>The Reverse Golden Section and Other Stigmatized Identities</center>

*Homeless person* and *mental patient* were not found to be consistent with the reverse golden section hypothesis as indicated by Raskin et al. (2008). However, the

<center>26</center>

average mean of *homeless person* and *mental patient* together did fall below .50 (*M* = 46.4%). Hence, the results were nearer to the reverse golden section hypothesis than the traditional golden section hypothesis, suggesting that some stigma was present, but not in a pattern fully consistent with the reverse golden section. It is interesting that the *age-related stigmatized identity* group (*elderly person* and *senior citizen)* was viewed more negatively than the *other stigmatized identity* group (*homeless person* and *mental patient*). *Homeless person* and *mental patient* may not have elicited a reverse golden section ratio because they were "outshined" by the age-related stigmatized identities. In other words, because *elderly person* and *senior citizen* were rated side-by-side with *homeless person* and *mental patient*, the latter may not have produced as many negative ratings because, by comparison, they do not carry as much stigma. If the age-related stigmatized identities had been omitted from this study and instead more positive identities included, it is possible that findings may have paralleled Raskin et al. (2008), with *homeless person* and *mental patient* producing findings that replicated the reverse golden section hypothesis. Perhaps identity ratings are influenced by what additional words are being presented at the same time in the same context. In this case, age-related identities were more stigmatized than mental illness and homeless identities, even though both were viewed negatively. This might suggest that the process of stigmatization and the use of the golden section ratio in evaluating others may be context-dependent.

## Limitations and Future Implications

The present study may have benefited from surveying a more diverse population. A more ethnically diverse sample might have shed light on cultural differences in ageism and labeling. It would have also been helpful to survey participants from a wider range of

ages (e.g., younger populations and older populations). Additionally, one must be aware of the implications for surveying strictly from a college campus. A college campus is populated with a majority of young adults. Exposure to the aging population on a college campus is likely to be infrequent. As a result, surveying populations from other demographic age ranges may produce alternate results. Additionally, it might have been interesting to investigate only one stigmatized population in the present study. Recall that the present study asked participants to rate both an *age-related stigmatized identity* group (*elderly person* and *senior citizen)* and an *other stigmatized identity* group (*homeless person* and *mental patient*). If each group was utilized in a separate study, findings may have been different. When utilizing two stigmatized categories, negative ratings for any given stigmatized identity may be influenced by what other stigmatized identities are also being rated. Furthermore, it might be interesting to implement a similar study in a different country or culture. For example, it would be helpful to investigate ageism utilizing the golden section hypothesis in a culture where the aging population is highly revered, such as China. If results indicate a traditional golden section hypothesis for age-related stigmatized identities, researchers might better understand the degree to which culture influences ageism. Additionally, future studies might examine gender differences in rating identities associated with old age. Women generally appear to be more affected than men by society's pressure to remain young and beautiful (Montepare, 2006; Saucier, 2004). As a result, women may rate identities associated with old age more negatively than men. On the other hand, women are more likely than men to be caregivers for the aging population (Brody, 2004). Their increased exposure to the population may encourage them to rate identities associated with old age more positively than men. It

would be interesting to implement studies that explore whether or not there are gender-related differences in ratings of the aging population.

## Conclusion

Briefly, the traditional golden section hypothesis indicates that 61.8% of adjectives used to describe an identity are typically positive. However, *elderly person* and *senior citizen* produced findings that inverted this pattern, findings in which roughly 39.5% of ratings were positive. There are several implications of the present study. First, the occurrence of a reverse golden section hypothesis for the terms *elderly person* and *senior citizen* indicates that ageism continues to prevail in how people think about the aging population. Secondly, the study provides evidence that *elderly person* and *senior citizen* specifically function as stigmatized identities. Third, findings support the hypothesis that that age-related labels influence the way people process age-related terms. It is postulated that when people rate identities associated with the aging population, they call upon additional expressions that are representative of societal values or experiences. It appears that society influences the interpretation of information regarding old age. What might this suggest for the future?

Research highlights the importance of challenging the labels that possess destructive undertones in the aging population (Mautner, 2007; Nuessel, 1982; Tornstam, 1992). People must first contest the faulty labels that have developed as a product of societal values, experiences, and attitudes. Utilizing labels that do not appear to elicit negative connotations is desirable. For example, researchers and writers should refrain from utilizing terms such as *elderly person* or *senior citizen* because they appear to generate automatic negative responses. Once the labels are contested, people must then

address the basis for why the connotations occur. That is, people must address the social structure and widespread values that potentially intensify ageism. Also beneficial are educational programs that present valuable information and correct faulty information. Reducing the stigma associated with old age may then alter one's thought process. This may potentially result in a shift from a reverse golden section rating pattern to a traditional golden section rating pattern. As a result, a more positive view of older people may transpire.

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TABLES

Table 1

Descriptive Statistics for Identity Ratings (*N* = 148)

|  | *Minimum* | *Maximum* | *Mean* | *Std. Deviation* |
|---|---|---|---|---|
| Elderly Person | .00 | 1.00 | .395 | .170 |
| Senior Citizen | .00 | .83 | .395 | .170 |
| Grandparent | .08 | .92 | .577 | .174 |
| Middle-Aged Adult | .08 | 1.00 | .674 | .204 |
| Nurse | .33 | 1.00 | .757 | .128 |
| Musician | .00 | 1.00 | .693 | .200 |
| Adolescent | .08 | 1.00 | .626 | .175 |
| Child | .25 | .92 | .641 | .156 |
| Business Person | .08 | 1.00 | .660 | .152 |
| Lawyer | .25 | 1.00 | .667 | .133 |
| Secretary | .08 | 1.00 | .553 | .194 |
| Mental Patient | .08 | 1.00 | .491 | .215 |
| Homeless Person | .08 | 1.00 | .438 | .204 |
| Retired Person | .08 | 1.00 | .544 | .213 |
| Self | .17 | 1.00 | .729 | .171 |
| Age-related Stigmatized Identities (Elderly Person & Senior Citizen) | .04 | .92 | .395 | .154 |
| Other Stigmatized Identities (Mental Patient & Homeless Person) | .08 | .92 | .464 | .172 |
| Remaining Identities (Not including the Self) | .44 | .94 | .610 | .090 |

APPENDICES

Appendix A – Golden Section Grid

Categorize each of the individuals in the grid below according to the adjective pairs provided. For example, if you think the first word of the pair applies to the individual more, then write a "1" in that square of the grid. If you think the second word of the pair applies to the individual more, then write a "2" in that square of the grid. Go by your impressions; don't dwell too long on each one.

| | Child | Elderly Person | Grand-parent | Middle-aged Adult | Nurse | Musician | Adolescent | Senior Citizen | Business Person | Lawyer | Secretary | Mental Patient | Homeless Person | Retired Person | Self |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stingy-Generous | | | | | | | | | | | | | | | |
| Pleasant-Unpleasant | | | | | | | | | | | | | | | |
| False-True | | | | | | | | | | | | | | | |
| Fair-Unfair | | | | | | | | | | | | | | | |
| Passive-Active | | | | | | | | | | | | | | | |
| Energetic-Lethargic | | | | | | | | | | | | | | | |
| Dull-Sharp | | | | | | | | | | | | | | | |
| Excitable-Calm | | | | | | | | | | | | | | | |
| Weak-Strong | | | | | | | | | | | | | | | |
| Bold-Timid | | | | | | | | | | | | | | | |
| Soft-Hard | | | | | | | | | | | | | | | |
| Rugged-Delicate | | | | | | | | | | | | | | | |