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MEANING IN LIFE AND AUTOMATIC STEREOTYPING: A STUDY OF COLLEGE
STUDENTS

A Thesis
presented in partial fulfillment of requirements
for the degree of Master of Arts
in the Department of Psychology
The University of Mississippi

by

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ABSTRACT

The purpose of the present study was to explore the role of meaning in life in automatic stereotyping in White individuals with respect to African Americans. The study aimed to establish whether meaning in life predicted automatic stereotyping even when controlling for self-esteem, a variable suggested to be a moderator of stereotyping. To assess these variables a number of tasks or measures were administered. The Person Categorization Task was employed as a measure of automatic stereotyping, the Purpose in Life test - Short Form (PIL-SF) was given as a measure of perceived meaning in life, and the Rosenberg Self-Esteem Scale (RSS) was administered as a measure of global self-esteem. The study was conducted with 110 White college students (64 females and 46 males) from a medium-sized university located in the southern United States. The average age of the participants was 18.98 years old (SD age = 1.49). The results of the study's initial analyses did not yield a statistically significant association between meaning in life and negative automatic stereotyping. Self-esteem was also not significantly associated with negative automatic stereotyping. The regression model with meaning and self-esteem as predictors of negative automatic stereotyping was not significant, with meaning and self-esteem not predictive of lower levels of automatic stereotyping to a statistically significant degree. Median-split analyses partially supported a significant correlation between perceived meaning in life and negative automatic stereotyping for participants with low negative automatic stereotyping. The implications of the findings are discussed in light of the study limitations. Future recommendations are also offered.

Key words: Meaning in life, automatic stereotyping, prejudice, self-esteem

LIST OF ABBREVIATIONS AND SYMBOLS

MMM	Meaning maintenance model
PCT	Person Categorization Task
PIL-SF	Purpose in Life test - Short Form
RSS	Rosenberg Self-Esteem Scale
SIT	Social Identity Theory
TMT	Terror Management Theory

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I. INTRODUCTION

Meaning in Life

Meaning in life is frequently a component of theoretical approaches that highlight the importance of having purpose as a core, fundamental aspect of human existence (Battista & Almond, 1973; Frankl, 1959/1984, 1994; Reker, Peacock, & Wong, 1987). There is no consensus, however, on the best manner of conceptualizing meaning, and a number of different proposals have been asserted for how meaning may be defined and assessed (e.g., Fjelland, Barron, & Foxall, 2008; Reker & Fry, 2003; Wong, 2012).

While meaning in life has been discussed by philosophers for centuries, an essential, modern figure introducing the concept of meaning in life as a variable of interest for psychology was Viktor E. Frankl. Frankl developed a psychological model based on the fundamental idea that humans are inherently meaning seekers (Frankl, 1959/1984). For Frankl, a will to meaning is the primary driving force in human existence. Frankl's definition of meaning refers to those reasons, tasks, experiences, and acts that are inherent in every situation and that give a person a "why" to existence, and therefore, serve as motivation to complete daily activities as well as to set meaningful goals to fulfill (Frankl, 1959/1984, 1994).

Meaning can be actualized in every circumstance and is contingent upon personal values and concrete situations (Frankl, 1959/1984, 1994). Thus, meaning is specific and unique for every person and it varies within different situations. Closely related to the concept of meaning is Frankl's concept of self-transcendence, the human capacity to intentionally direct attention and efforts to something or someone other than themselves (e.g., a cause, person/people, or a higher

power) (Frankl, 1959/1984, 1994). According to Frankl, some of the best routes to attain meaning are by serving others, cultivating relationships, believing in a higher power, and engaging in value-directed behavior (Frankl, 1959/1984, 1994; Schulenberg, Hutzell, Nassif, & Rogina, 2008).

Along the same lines, Reker et al. (1987) defined meaning in life as the “cognizance of order, coherence and purpose in one’s existence, the pursuit and attainment of worthwhile goals, and an accompanying sense of fulfillment” (p. 44). This is a definition that encompasses cognitive, behavioral, and affective components of meaning (Halama, 2003). Meaning in life has also been defined as a broad psychological need of having a sense of meaning related to future goals (Baumeister, 1991), and a stable orientation towards life in which the aim is to perceive life as significant and worth living (Schnell, 2010).

Michael Steger, a prominent researcher of meaning, defines meaning as a high-order construct that encompasses comprehension and purpose as two sub-dimensions (Steger, 2012). According to Steger (2012), comprehension refers to being able to make sense of the world and one’s life (creating a meaning framework for life), while purpose refers to having long-term goals and aspirations consistent with one’s meaning framework (motivating daily activities). From this perspective people interpret their situations through their meaning framework. They attempt to maintain meaning when facing inconsistencies or violations of meaning, engaging in a continuous process of meaning-making (Anderson, Kay, & Fitzsimons, 2013; Park, 2010, 2013; Steger, 2012).

Similarly, meaning-making theory identifies two levels of meaning: global meaning and situational meaning (Anderson et al., 2013; Park, 2010, 2013). Global meaning refers to the meaning framework that encompasses general beliefs about how the universe works, goals that

motivate one's existence, and a subjective sense of purpose. Alternatively, situational meaning refers to the meaning attributed to specific life events (Anderson et al., 2013; Park, 2010, 2013). From this perspective one's meaning framework is fundamental when appraising specific situations and facing new challenges in life (Anderson et al., 2013; Park, 2012, 2013).

From the positive psychology perspective, meaning in life is proposed as one of the most important routes to achieving happiness, being a strong predictor of life satisfaction and well-being (Peterson, Park, & Seligman, 2005; Vella-Brodrick, Park, & Peterson, 2009). Meaning in life is considered an underlying factor upon which character strengths and virtues contribute (Peterson & Park, 2012; Peterson et al., 2005). It is related to self-transcendence, leadership, social intelligence, gratitude, creativity, religiousness, hope, love, and zest, among many other adaptive variables (Peterson & Park, 2012; Peterson et al., 2005).

Most definitions of meaning in life emphasize the perception of existence as full of coherence and purpose (Bering, 2003; Längle, 2005; Reker et al., 1987; Steger, 2012; Wong, 2012). Perceived meaning in life becomes a motivational force resulting in goal-directed and values-directed behavior (Frankl, 1959/1984, 1994; Schulenberg et al., 2008; Steger, 2012; Wong, 2012; Zika & Chamberlain, 1992).

Among the shared aspects of the various definitions of meaning are: (1) it underlies a consistent explanatory meaning framework to evaluate life (Steger & Kashdan, 2013); (2) it is related to setting future goals, creating a sense of utility and excitement (Battista & Almond, 1973; Frankl, 1994; Steger 2012); (3) it is a subjective perception that motivates the completion of daily activities (Heine, Proulx, & Vohs, 2006; Steger, 2012); (4) it involves actualization of personal values (Baumeister, 1991; Frankl, 1994; Längle, 2005); (5) the lack of meaning in life, or meaninglessness, results in maladaptive thoughts, feelings, and behaviors (Baumeister, 1991;

Frankl, 1994; Maddi, 1967; Mascaro & Rosen, 2008; Vella-Brodrick et al., 2009); and (6) even though it is subjective, it has been associated with paths common across people (e.g., relationships, service-oriented behavior) (Bar-Tur, Savaya, & Prager, 2001; Emmons, 2005; Kashdan & Steger, 2007; McDonald, Wong, & Gingras, 2012; Schnell, 2011; Wong, 2012). For the purpose of this study meaning in life is conceptualized similarly to the definition offered by Frankl. Meaning is the degree to which the individual perceives a sense of what is most important in life, the articulation of clear and meaningful goals, and congruence between one's thoughts, actions, and values with one's goals (Frankl, 1959/1984; Schulenberg et al., 2008).

With regard to meaning making, some researchers have asserted that it is primarily a social process. Meaning is constructed with others and relates to phenomena that are specific to human beings (Proulx, 2013; Sheldon, 2012; Van Tongeren & Green, 2010). From this perspective culture constitutes the background and framework for meaning, and existential concerns trigger the search for meaning (Proulx, 2013; Sheldon, 2012). Prior to discussing the other aspects of the present study, the meaning maintenance model (MMM) is explained, and findings regarding meaning's importance are further described (King, 2012a; Proulx, 2013; Sheldon, 2012; Williams, 2012).

The Meaning Maintenance Model and Judgments on Meaning

The meaning maintenance model, closely related to the idea of meaning making (Heine et al., 2006), states that there is a continuous monitoring process in the background of mental activities. This ongoing process assesses the presence of meaning and engages in automatic efforts in order to defend or sustain meaning (Cesario, Plaks, & Higgins, 2006; Proulx & Heine, 2008; Sheldon, 2012). According to this model, a meaning system is composed of four areas that need to be addressed, at least to some level, to attain a strong meaning system. These areas are

(1) self-esteem or having positive conceptualizations of one's self, (2) affiliation and cultivating close relationships, (3) closure and certainty expressed in the need of resolving ambiguous situations and personal identity, and (4) symbolic mortality defined as the desire of being part of something long-lasting and significant that transcends one's death (Van Tongeren & Green, 2010). If one of these areas is disturbed, other areas attempt to compensate (Van Tongeren & Green, 2010). Research supporting this model indicates that when individuals perceive a threat to their beliefs or sense of self they engage in active attempts to protect themselves and maintain meaning, such as efforts to bolster self-esteem (Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004; Van Tongeren & Green, 2010), enhance proximity to others (Pinel, Long, Landau, Alexander, & Pyszczynski, 2006; Williams, 2012), and reduce uncertainty (McGregor, Zanna, Holmes, & Spencer, 2001).

The meaning maintenance model has important implications for the literature of meaning, especially when considering stressful situations where people engage in a process of meaning making when a specific situation threatens the individual's perceived sense of meaning (Heine et al., 2006; Park, 2010). For example, when a young person is diagnosed with a life-threatening illness, in theory, this endangers his or her global meaning with respect to fulfilling specific future goals, such as being able to start a career, get married, or have children. In this instance, for this person to sustain meaning, he or she would engage in meaning-making, such as generating new goals consistent with the diagnosis, endorsing a positive view of the situation, and/or finding a meaningful explanation for the occurrence of the event.

There has been a systematic and rapid growth of research studies focusing on meaning making, appraised meaning, and adjustment after crisis (Gillies & Neimeyer, 2006; Park, 2010). Research studies suggest that meaning making following a stressful event is a beneficial long-

term coping strategy (Boehmer, Luszczynska, & Schwarzer, 2007; Gillies & Neimeyer, 2006; Park, 2010; Tolstikova, Fleming, & Chartier, 2005). Moreover, meaning-making coping strategies, defined as cognitive strategies to discover the meaning inherent in a certain situation, is predictive of social and emotional well-being after a disaster or crisis event (Boehmer et al., 2007; Tolstikova et al., 2005).

Van Tongeren and Green (2010) aimed to test the theoretical assumptions of the meaning making model through a sophisticated experimental study of the perception of meaning and threats to meaning. In their study, participants were told they were going to engage in a memory task and asked to look at a dot in the center of a screen while trying to memorize some words. Without their knowing, priming cues in one of the corners of the visual field were shown randomly before the presentation of the target word. For the control group the priming words were neutral words, whereas for the experimental group the priming words were cues related to meaninglessness (meaning threats), words such as chaos, empty, and futile. Participants were then asked to complete the Kunzendorf No Meaning Scale (Kunzendorf, Morgan, & Gray, 1996) among other self-report measures of interest for the study. The authors found that participants in the experimental group reported higher levels of meaning in life following implicit threats to meaning, even when controlling for variables such as self-esteem, mood state, anxiety, and cognitive accessibility of death related-thoughts, as would be expected based on the meaning making model (Van Tongeren & Green, 2010). In a follow-up study published in the same article, participants completed measures related to self-esteem, affiliation, closure and uncertainty, and symbolic immortality, the four areas comprising the meaning system. As predicted by the meaning making model, in an effort to uphold meaning, participants in the

experimental condition reported higher scores in each of the four areas of meaning (Van Tongeren & Green, 2010).

The importance of these studies lies in the idea that individuals are continuously evaluating life events based on their meaning frameworks and that attempts to disrupt their meaning-making systems will lead to efforts to protect or reestablish a sense of meaning (King, 2012a; Proulx & Heine, 2008; Sheldon, 2012; Van Tongeren & Green, 2010). Given that threats to the perception of meaning result in psychological counters by individuals is consistent with the idea that meaning-making is a fundamental aspect of the human condition (Sheldon, 2012; Van den Bos, 2009; Van Tongeren & Green, 2010). Consequently, perceived meaning has garnered major empirical interest across domains of human functioning (Heine et al., 2006; Proulx & Heine, 2008; Sheldon, 2012; Van den Bos, 2009; Van Tongeren & Green, 2010).

When information is consistent with an individual's global meaning, it is thought that the person is not actively engaged in a conscious search for meaning (King, 2012a). The perception of meaning is thought to occur naturally (King, 2012a). There is evidence showing that self-reported levels of meaning in life are moderately stable across time (Steger & Kashdan, 2007, 2013). However, when the perception of meaning is unstable, it is significantly associated with symptoms of distress, negative affect, depression, and social anxiety (Steger & Kashdan, 2013).

Literature on the presence of meaning has indicated that judgments of how meaningful one's life is are evaluated through several sources of information (Hicks & King, 2009a, 2009b; King, 2012a). Studies of predictors of meaning have noted that when individuals are asked how meaningful their lives are, they take into account sources of information that are accessible, relevant, and of positive valence, affirming the person's sense of meaning (King, 2012a, 2012b). When considering cognitive accessibility of certain information such as characteristics of one's

true self (Schlegel, Hicks, King, & Arndt, 2011), social relationships (Hicks & King, 2009b), and positive affect evoking stimuli (Hicks, Schlegel, & King, 2010), people tend to report higher levels of meaning in life and base their responses on the source of information that is most meaningful and accessible (Hicks et al., 2010; King, 2012a, 2012b).

A study conducted by Hicks and King (2009b) showed that positive affect (Hicks et al., 2010) and social relatedness (Hicks & King, 2009b) are both independent predictors of perceived meaning in life. Nonetheless, the authors found that when inducing positive affect in people (through vignettes about happy stories), individuals reporting higher levels of loneliness tended to base their judgments of meaning on positive affect instead of on information about social relationships (Hicks & King, 2009b). On the contrary, when people reported lower levels of loneliness, they tended to base their perceived meaning on their social relationships, even after negative affect was induced through vignettes that contained sad stories (Hicks & King, 2009b). Results suggested that with regard to the question of meaning people want their lives to be meaningful and are looking for sources of information that are congruent and accessible for their interpretations (Hicks & King, 2009b).

As researchers from different theoretical approaches and disciplines have started to recognize the importance of meaning in psychological functioning, during the last decade research on meaning has grown incrementally, with studies contributing to its understanding and its applications to mental health and everyday behavior (Melton & Schulenberg, 2008; Morgan & Farsides, 2009; Reker, 2000; Schulenberg et al., 2008; Steger, Kashdan, Sullivan, & Lorentz, 2008).

Research on Meaning and Human Functioning

Research studies have consistently demonstrated that meaning in life plays an important role in well-being (Coward, 1996; Farber et al., 2010), life satisfaction (Heisel & Flett, 2004), and social functioning (Yee Ho, Cheung, & Cheung, 2010). Specifically, numerous studies have shown a positive significant relationship between meaning in life and general well-being (Drescher et al., 2012; Ryff & Singer, 1998), positive affect (Hicks & King, 2007; King, Hicks, Krull & Del Gaiso, 2006; Pan, Wong, Chan, & Joubert, 2008), resilience (Nygren et al., 2005; Pan et al., 2008), adaptive coping strategies when faced with difficult situations (Barkwell, 1991; Farber et al., 2010; Kyung-Ah et al., 2009), perceived social support (Ulmer, Range, & Smith, 1991), posttraumatic growth (Park, 2010; Triplett, Tedeschi, Cann, Calhoun, & Reeve, 2012), and physical health (Bower, Kemeny, Taylor, & Fahey, 2003; Krause, 2009; Park et al., 2008; Pinquart, 2002).

Furthermore, people with higher levels of perceived meaning report fewer symptoms of depression (Mascaro & Rosen, 2005, 2008; Rahiminezhad, Kazemi, Farahani, & Aghamohamadi, 2011), anxiety (Rahiminezhad et al., 2011), substance use (Addad & Himi, 2008; Flora & Stalikas, 2012; Newcomb & Harlow, 1986; Noblejas de la Flor, 1997; Rahman, 2001; Schnetzer, Schulenberg, & Buchanan, 2013), general distress (Pan et al., 2008), suicidal ideation (Heisel & Flett, 2004; Kumar, Basu, & Das, 2008), and posttraumatic stress (Drescher et al., 2012; Triplett et al., 2012). Along similar lines, individuals reporting higher levels of meaning also report higher scores in areas regarded as protective factors, such as personal growth, autonomy, sense of control, self-acceptance, curiosity, self-esteem, and self-efficacy (Debats, 1996; DeWitz, Woolsey, & Walsh, 2009; Drescher et al., 2012; Halama, 2003; Steger et al., 2008; Zika & Chamberlain, 1992).

With specific regard for social interactions, studies of meaning have shown that greater levels of perceived meaning in life positively and significantly correlate with organizational ethical behavior, group achievement (Bligh & Kohles, 2009; Hutzell, 1988), social skills (Steger et al., 2008; Weinstein, Xie, & Cleanthous, 1995; Wrzesniewski, McCauley, Rozin, & Schwartz, 1997), feelings of connection with others (Lambert et al., 2010; Steger & Kashdan, 2013; Steger et al., 2008), and interpersonal appeal (Stillman, Lambert, Fincham, & Baumeister, 2011). On the contrary, people with lower meaning in life are more likely to report social problems such as alienation and feelings of social inadequacy (Yee Ho et al., 2010), social exclusion (Stillman et al., 2009), loneliness (Stillman et al., 2009; Van Beest & Williams, 2006; Williams, 2012; Zadro, Boland, & Richardson, 2006), and social anxiety (Steger & Kashdan, 2013).

Stillman et al. (2011) found that people reporting higher levels of meaning in life were rated by others as more likeable, better potential friends, and more desirable conversation partners, with meaning having a stronger impact on social appeal than other variables such as self-esteem, happiness, and extraversion. In the context of work, Rosso, Dekas, and Wrzesniewski (2010) indicated that work groups in which the proportion of members who experienced a high sense of meaning reported stronger overall identification with the team, less team conflict, more faith and trust in management, greater satisfaction with coworkers, more commitment to the team itself, and healthier group processes in terms of cooperation and conflict resolution. Another study found that in the 2008 US elections, the capacity of a leader to communicate meaning in their message and make followers perceive it as meaningful was an essential element to gain support for a political campaign (Bligh & Kohles, 2009).

As for sources of meaning, research findings have pointed towards social relationships, social connectedness, and social roles as important sources of meaning across different

populations (Fave & Coppa, 2009; Hicks & King, 2009a, 2009b; Stillman et al., 2009). Meaning in life promotes and guides interpersonal relationships and consequently has important implications for positive social functioning (Steger & Kashdan, 2013), relationships, and the value placed on social affiliation (Stillman et al., 2011).

Findings on the relationship between meaning, cognitive processes, and personality traits are noteworthy because these factors are noted to predispose, to some degree, the way individuals interact with their social environment and how they approach a range of situations (Burrow, O'Dell, & Hill, 2009; Hicks et al., 2010; King, 2012a; King, Burton, Hicks, & Drigotas, 2007; Steger et al., 2008). As for cognitive processes, research on intuition has affirmed that individuals with higher levels of intuition report more feelings of meaning, higher levels of positive explanations when facing a negative event, and a better learning performance and accurate discrimination of stimuli (Hicks et al., 2010; King, 2012a; King et al., 2007). When ascribing meaning to new situations and recognizing stimuli that we are familiar with, intuition and heuristics play an important role in the evaluation of situations (Hicks et al., 2010; King, 2012a; King et al., 2007).

Furthermore, Steger et al. (2008) found that presence of meaning is significantly and positively associated with enjoyment derived from thinking and curiosity. The results of this study suggested that individuals experiencing higher levels of meaning endorse a more active search for information in order to understand how things work. Moreover, they tend to endorse a greater drive for knowledge. Additionally, other studies have noted that meaning appears to promote goal-directed thinking (Burrow et al., 2009) and greater cognitive flexibility (King, 2012a, b), suggesting that perceived meaning facilitates cognitive tasks and decreases cognitive rigidity (Burrow et al., 2009; King, 2012a, b; Steger et al., 2008).

With respect to personality traits, Steger et al. (2008) found that presence of meaning significantly correlates with extraversion scores (specifically with regard to being warm, positive, and active), openness to ideas, agreeableness (specific to altruism and compassion), and conscientiousness (Schnell, 2011). Alternatively, presence of meaning negatively and significantly correlates with neuroticism (Steger et al., 2008). These findings have special implications for the present study as research affirms that meaning is associated with better social relationships (Schnell, 2011), value-directed behavior (King et al., 2006), and altruism (Steger et al., 2008).

Based on the review of the meaning in life literature, it is apparent that research has systematically demonstrated the importance of perceiving meaning and the positive implications that meaning carries across multiple areas of functioning (Fjelland et al., 2007; Reker & Fry, 2003; Wong, 2012). Research findings among different disciplines and theoretical perspectives have indicated that meaning not only plays an important role in personal well-being (Peterson et al., 2005; Vella-Brodrick et al., 2009), but that it has substantial influence in the way individuals approach situations (Steger et al., 2008; Wrzesniewski, 2003) and interact in their relationships (Emmons, 2005; Kashdan & Steger, 2007; McDonald et al., 2012; Schnell, 2011; Wong, 2012).

Based on these compelling findings, it logically follows that research on meaning should be expanded to address new questions. For example, meaning is potentially useful in enhancing the understanding of cognitive and social processes that explain individual differences in the way people respond to certain situations and people (Florez, Walsh, Bowden, Stewart, & Schulenberg, 2013; Sheldon, 2012). With this premise as a foundation, Florez et al. (2013) explored the relationship between meaning in life and automatic stereotyping (the involuntary activation of a set of beliefs towards a target group) in a sample of college students. Prior to

discussing this study in detail, as well as how this investigation relates to the current study, a review of the automatic stereotyping literature is offered.

Automatic Stereotyping

Stereotyping is defined as a cognitive process of categorizing information related to group characteristics; it represents a type of heuristic mechanism in which people assign attributes that typify a group of people without actually referring to particularities of that group (Bodenhausen & Richeson, 2010; Jones, 1997; Jones & Fazio, 2010; Kanahara, 2006; Kawakami, Dovidio, Moll, Hermsen, & Russin, 2000; Lindgren, 1994). A stereotype, then, is a set of beliefs about a particular group that are generalized to every member of the group (Fiske, 2000; Jones, 1997; Kanahara, 2006; Lindgren, 1994). The information used to form stereotypes is acquired through socialization, and direct life experiences related to members of different groups, or out-groups; usually, these stereotypes are shared within the individual's main-stream cultural view, or in-group (Bodenhausen & Richeson, 2010; Kawakami et al., 2000).

Although holding a stereotype specific to an out-group does not necessarily result in discrimination or engaging in negative behaviors towards the out-group (Ashmore & Del Boca, 1981; Billig, 1985; Fiske, 2000), when stereotypes are negative, they facilitate discrimination that involves negative cognitive, emotional, and behavioral activation toward members of other cultures (Fiske, 2000; Jones & Fazio, 2010; Pearson, Dovidio, & Pratto, 2007; Stewart & Payne, 2008).

Therefore, as stereotypes guide attitudes, attributions, and behavior that may affect members of a stigmatized group, they have important social repercussions and a major impact on interracial interactions (Biernat, 2003). Specifically, negative stereotypes can generate a wide array of behaviors toward a member of an out-group that can vary from subtle changes in

attitudes, gestures, and non-verbal behavior, to explicit forms of prejudice such as avoidance or antipathy towards members of other races (Dovidio & Gaertner, 2004; Fiske, 2000; Jones & Fazio, 2010; Pearson et al., 2007; Stewart & Payne, 2008).

Stereotypes are activated by the presence of an out-group person or any contextual cue associated with the specific race (Devine, 1989; Stewart & Payne, 2008). Stereotyping not only occurs voluntarily, when the individual intentionally acknowledges holding negative beliefs towards a group, but can occur automatically and therefore out of the conscious awareness of the individual, generating automatic biases against a particular group (Bargh, Chaiken, Gvender, & Pratto, 1992; Devine, 1989; Fiske, 2000; Payne, Lambert, & Jacoby, 2002; Stewart & Payne, 2008). This process of spontaneous and involuntary activation of stereotypes is called automatic stereotyping and is unintentional and uncontrollable when the individual is in the presence of the stigmatized member of the group (Blair & Banaji, 1996; Clow & Esses, 2007; Devine, 1989, 2001; Fiske, 2000; Stewart & Payne, 2008).

To measure automatic stereotyping several designs based on the paradigm of implicit categorization tasks have been developed, such as the weapons-identification paradigm (Payne, 2001), the Stroop task (Gollwitzer, Fujita, & Oettingen, 2004), the Implicit Association Test (Greenwald, McGhee, & Schwartz, 1998), and the Person Categorization Task (Banaji & Hardin, 1996). In general the tasks involve: (1) semantic priming, a prime that represents a negative or positive stereotypical trait related to the target group (e.g., African Americans), (2) the activation of stereotypes through nominal or visual referents of the group, and (3) a deception related to a demand of a fast response to a categorization task, that to the participants' knowledge is not related to the content of the prime words or the stimuli (Gollwitzer et al., 2004; Greenwald & Banaji, 1995; Greenwald et al., 1998; Payne, 2001).

According to these paradigms, automatic stereotyping will occur with the fast presentation of the stimuli (less than 500 ms; Clow & Esses, 2007; Neely, 1977). When participants respond in less than 500 ms, due to the task demands, the uncontrollable and unconscious characteristics of the response becomes evident (Gollwitzer et al., 2004; Payne et al., 2002; Stewart & Payne, 2008). The measure of automatic stereotyping is based upon the speed of categorization, where faster reaction times indicate a stronger association and thus higher levels of automatic stereotyping (Blair & Banaji, 1996; Gollwitzer et al., 2004; Payne, Jacoby, & Lambert, 2005; Payne et al., 2002). People higher in automatic stereotyping are said to respond faster to the task because the semantic priming is aligned with their stereotype, and consequently facilitates the categorization (Blair & Banaji, 1996; Devine, 1989; Kawakami, Dion, & Dovidio, 1998).

Research findings in the area of automatic stereotyping have revealed that when individuals are unconsciously primed with stereotypical traits, stereotypes are activated in both people reporting high and low levels of prejudice towards African Americans (Devine, 1989, 2001). Even for individuals that report low levels of prejudice, automatic stereotyping occurs in the presence of an out-member group, impacting the way people respond (Dovidio & Gaertner, 1996; Latu et al., 2011; Stewart, Weeks, & Lupfer, 2003; Stewart & Payne, 2008). Furthermore, it has been demonstrated that stereotypes are more likely to occur automatically if individuals are under a high-cognitive load, distracted, or with no conscious intention to avoid stereotyping (Blair & Banaji, 1996; Spencer, Fein, Wolfe, Fong, & Dunn, 1998). When individuals reporting low levels of prejudice are able to monitor their answers (e.g., regarding descriptions of African Americans) they evidence a less stereotypical response (Devine, 1989, 2001).

These findings have had major implications in the study of prejudice because they reveal that even individuals with egalitarian beliefs automatically activate negative stereotypes toward other racial groups and are consequently influenced by them (Biernat, 2003; Dovidio & Gaertner, 1996; Jones & Fazio, 2010; Latu et al., 2011; Stewart et al., 2003). Everyday interactions with members of other racial/ethnic groups are biased by automatic activation of stereotyping, and thus have an effect in multiple contexts through implicit use of negative stereotypes (Biernat, 2003; Dovidio & Gaertner, 1996; Jones & Fazio, 2010; Latu et al., 2011; Stewart et al., 2003). Examples of potential contexts include job searches, legal decisions, political endeavors, and academia (Biernat, 2003; Bodenhausen & Richeson, 2010; Jones & Fazio, 2010). Such findings have direct implications for stigmatized groups, such as African Americans. For instance, African Americans are often subject to negative stereotypes and are especially vulnerable to undesirable outcomes associated with automatic stereotyping (Biernat, 2003; Bodenhausen & Richeson, 2010; Jones & Fazio, 2010).

Bearing in mind the pervasiveness of automatic stereotyping and its potential influence on opinions, judgment, decision making, and behavior toward members of stigmatized groups (Biernat, 2003; Blair & Banaji, 1996; Devine, 2001; Fiske, 2000; Pearson et al., 2007), interest in the phenomenon has continued to grow, with calls for research contributing to its understanding and reduction (Fiske, 2000; Latu et al., 2011; Pearson et al., 2007; Stewart et al., 2003). Studies have suggested that automatic stereotyping can be counteracted by an awareness of the existence of stereotypical information and training to negate existing stereotypes (Kawakami et al., 2000; Stewart, Latu, Kawakami, & Myers, 2010). However, there are mixed results on the long-term effectiveness of related interventions (Lambert et al., 2003; Payne et al., 2002; Richeson et al., 2003; Richeson & Shelton, 2003; Stewart & Payne, 2008).

Several studies have indicated that automatic forms of stereotyping might also be influenced by individual differences (Fiske, 2000; Monteith, 1993; Moskowitz, Gollwitzer, Wasel, & Schaal, 1999) such as cognitive control (Blair, 2002; Payne, 2001; Payne, Jacoby, & Lambert, 2004; Payne et al., 2005), chronic egalitarian goals (Jones & Fazio, 2010; Moskowitz, Solomon, & Taylor, 2000), affiliative motivation (Sinclair, Lowery, Hardin, & Colangelo, 2005), nervousness (Lambert et al., 2003; Richeson & Trawalter, 2005), cooperation and trust (Fiske, 2000), and self-esteem (Barden, Maddux, Petty, & Brewer, 2004; Blair, Ma, & Lenton, 2001; Kawakami et al., 2000; Lowery, Hardin, & Sinclair, 2001).

Of particular importance for the present study are the literature and findings on the association between self-esteem and processes of social comparison and intergroup bias. Such theory and investigations have implications for the systematic study of meaning and its relationship to automatic stereotyping (Crocker, Thompson, McGraw, & Ingerman, 1987; Hunter, Platow, Howard, & Stringer, 1996; Lindeman, 1997). In the following section the literature on the relationship between self-esteem and stereotyping will be summarized, prior to discussing in greater depth the purpose of the present study. The review now continues with the discussion of self-esteem, with specific reference to Terror Management Theory.

Self-Esteem and Terror Management Theory

For the purpose of this study, self-esteem is defined as the global subjective feeling of an individual's sense of worth and competence (Baumeister, Campbell, Krueger, & Vohs, 2003; Blascovich & Tomaka 1991; Mruk, 2006; Robins, Hendin, & Trzesniewski, 2001; Rosenberg, 1989). The relationship between self-esteem and constructs of well-being and mental health has been well documented. People that endorse higher levels of self-esteem tend to report greater happiness and psychological adjustment (Baumeister et al., 2003; Cheng & Furnham, 2003;

Lyubomirsky, Tkach, & Dimatteo, 2006; Orth, Robins, & Widaman, 2012), and people with lower levels of self-esteem tend to endorse greater levels of depression and anxiety (Lee & Hankin, 2009; Orth, Robins, Trzesniewski, Maes, & Schmitt, 2009; Schmitz, Kugler, & Rollnik, 2003; Sowislo & Orth, 2013).

The potential importance of self-esteem in understanding stereotyping has been pointed out by theorists and researchers from the perspective of Terror Management Theory (TMT; Greenberg et al., 1990; Solomon, Greenberg, & Pyszczynski, 1991), as well as Social Identity Theory (SIT; Hunter, Banks, O'Brien, & Kafka, 2011; Tajfel & Turner, 1979). Both theories suggest that people are continuously motivated to achieve self-esteem, and a major way of accomplishing this goal is through feelings of belonging and social identity related to the individual's group or culture (Greenberg, 2012; Hunter et al., 2011).

For the purpose of the current investigation, given the interest in Terror Management Theory from researchers and theoreticians, as well as its importance in understanding self-esteem in relation to meaning, the conceptualization of self-esteem will be further described from this perspective. Terror Management Theory was originated to explain (1) how people cope with death realization, (2) why people naturally aim to achieve positive self-esteem, and (3) why people tend to engage in negative evaluations of out-groups (Greenberg, 2012; Pyszczynski, Greenberg, & Solomon, 1997; Solomon, Greenberg, & Pyszczynski, 2004). According to Terror Management Theory, when humans face the realization of death they undergo a state of anxiety that can further lead to psychological maladjustment (Greenberg, Pyszczynski, & Koole, 2004; Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989; Routledge et al., 2010). To cope with death anxiety, individuals search for symbolic immortality (e.g., creating something enduring and positive to society) through culture (Greenberg et al., 2004; Routledge et al., 2010).

Perceiving oneself as part of a culture guarantees a long-lasting symbolic life, as culture provides a framework to understand life, recognize what is valuable, and generate meaningful contributions based on that understanding (Feldman & Snyder, 2005; Greenberg et al., 2004).

Terror Management Theory asserts that self-esteem is the psychological pathway that directly leads to the reduction of terror associated with death (Arndt, 2012; Routledge et al., 2010; Solomon et al., 1991). For Terror Management Theory, self-esteem “refers to a sense of personal significance and value” (Routledge et al., 2010, p. 900). Its role is to function as a buffer for death anxiety (Arndt, 2012). In this theory, high levels of self-esteem provide a sense that one is culturally valued and appreciated, and one’s existence signifies something within a social framework (Arndt, 2012; Greenberg, 2012; Greenberg et al., 1992). Through self-esteem, individuals mitigate concerns about death, recognizing themselves as contributing to something meaningful, and ultimately, as achieving symbolic immortality (Arndt, 2012; Routledge et al., 2010; Sedikides & Gregg, 2008).

Research findings reveal that self-esteem, indeed, functions as a buffer for anxiety triggered by mortality awareness. Individuals exposed to mortality salience tend to endorse high levels of self-esteem and appear to be less vulnerable to the effects of death anxiety, engaging in fewer cognitive and behavioral strategies to bolster their own cultural views (Aberson, 1999; Arndt, 2012; Pyszczynski et al., 2004; Routledge et al., 2010).

Regarding the study of stereotyping, research indicates that when people with low self-esteem are confronted with the possibility of death, they are more vulnerable to experiencing psychological distress from death anxiety (Arndt, Greenberg, Schimel, Pyszczynski, & Solomon, 2002; Greenberg et al., 1992; Routledge & Arndt, 2008). Moreover, they are more likely to engage in cognitive and behavioral attempts to bolster self-esteem via discriminating against

other people and defending their world views (Arndt et al., 2002; Greenberg et al., 1992; Routledge & Arndt, 2008).

According to Terror Management Theory, people with high self-esteem exhibit a reduced need for prejudice towards other cultures, as their own sense of self-worth provides a buffer for anxiety (Arndt, Cook, & Routledge, 2004; Crocker & Schwartz, 1985; Greenberg et al., 2004; Solomon et al., 1991). On the contrary, people with low self-esteem seem to use greater out-group discrimination and engage in more stereotypical beliefs, as a means to compensate for the lack of a sense of self-worth in their own culture (Arndt et al., 2002; Crocker & Schwartz, 1985; Greenberg et al., 2004; Solomon et al., 1991). Therefore, in order to compensate for low self-esteem, people engage in stereotypical beliefs about other groups (Gonsalkorale, Carlisle, & Hoppel, 2007).

Studies of implicit stereotyping (or automatic stereotyping) have demonstrated that having a positive interaction with a member of the stigmatized group decreases automatic negative stereotypes towards the stigmatized group (Sinclair & Kunda, 1999; Sinclair et al., 2005). Alternatively, being exposed to threats to self-esteem, such as receiving negative feedback from a member of an out-group, augments automatic stereotyping (Sinclair & Kunda, 1999; Sinclair et al., 2005).

Furthermore, researchers of prejudice have found that global self-esteem functions as a moderator of the strength of intergroup bias (consistently benefitting and judging in more positive ways one's group compared to other groups), where people with higher levels of self-esteem evidence more equanimity and acceptance of out-group members (Baldwin & Wesley, 1996; Crocker & Schwartz, 1985; Greenberg et al., 2003; Rudman, Dohn, & Fairchild, 2007; Schimel et al., 1999). Individuals with low self-esteem demonstrate increases in negative

stereotyping and rigid bias towards out-group members (Baldwin & Wesley, 1996; Crocker & Schwartz, 1985; Rudman et al., 2007; Schimel et al., 1999).

In turn, other studies have indicated that it is high self-esteem (as opposed to low self-esteem) that promotes in-group bias (Aberson, Healy, & Romero, 2000; Gramzow & Gaertner, 2005; Hunter et al., 2011). These studies argue that individuals achieve high levels of self-esteem through social identification, and therefore the retention of in-group bias allows them to endorse higher levels of self-esteem (Aberson et al., 2000; Gramzow & Gaertner, 2005; Hunter et al., 2011). Thus, overall the results across studies are not uniform with regard to the role of self-esteem in stereotyping; however, it seems clear that automatic stereotyping varies as a function of the individual's motivation to protect or enhance self-esteem as supported in a number of empirical investigations (Greenwald & Banaji, 1995; Sinclair et al., 2005).

As can be seen from this review, self-esteem is considered to play an important role in the process of stereotyping (Greenberg et al., 2003; Rudman et al., 2007; Schimel et al., 1999). However, meaning may also play an important part as well. An argument for the inclusion of meaning in studies of stereotyping is also consistent with Terror Management Theory. As with self-esteem, from the Terror Management Theory perspective meaning is conceptualized as a buffer against existential anxiety, providing a means of achieving symbolic immortality, decreasing death anxiety and life uncertainty (Fieldman & Snyder, 2005; Greenberg et al., 2004; Snyder, 1997; Vess, Routledge, Landau, & Arndt, 2009).

As previously mentioned, Terror Management Theory proposes that one of the ways that people reduce death anxiety is by perceiving themselves as being valuable parts of a culture that is meaningful, and thus, through attaining a sense of personal meaning (Greenberg, 2012; Pyszczynski, Greenberg, Koole, & Solomon, 2010). Therefore, it follows that perceiving

meaning on an individual level could be a critically important method to reducing death anxiety, providing a symbolic sense of self and a means of self-transcendence (Hicks & King, 2009a, b; Kashdan & Nezlek, 2012; King et al., 2006; King & Hicks, 2009; Peterson & Park, 2012; Wong, 2005, 2012).

Meaning is consistently associated with self-transcendence, psychological adjustment, life satisfaction, and well-being (Peterson & Park, 2012; Peterson et al., 2005; Vella-Brodrick et al., 2009; Williams, 2012; Zadro et al., 2006). Furthermore, and highly congruent with the Terror Management Theory literature, meaning (or the lack thereof) is also consistently associated with death anxiety. Perceiving meaning is an effective way to cope with existential concerns such as mortality salience as it provides a sense of comprehension and purpose to everyday behavior (Arndt, Landau, Vail, & Vess, 2013; Bering, 2003; Landau, Kosloff, & Schmeichel, 2011; Proulx, 2013; Schnell, 2010; Simon, Arndt, Greenberg, Pyszczynski, & Solomon, 1998; Van den Bos, 2009; Vess et al., 2009).

With regard to the relationship between meaning and self-esteem, several studies suggest that high levels of self-esteem are associated with high levels of meaning, and vice versa (Debats, 1996; Halama, 2003; Routledge et al., 2010; Schlegel et al., 2011; Steger & Frazier, 2005). Research findings have reported significant positive bivariate correlations ranging from 0.38 to 0.76, which support the presence of a strong relationship between the two concepts (Debats, 1996; Halama, 2003; Schlegel et al., 2011; Steger & Frazier, 2005). Theoretically, from the meaning maintenance model's point of view, self-esteem is one of the dimensions involved in the perception of meaning. In order for people to perceive life as being meaningful they should also perceive themselves as being people of value (Van Tongeren & Green, 2010).

While the two concepts are associated, when compared to self-esteem, meaning involves a wider array of characteristics, relating not only to a sense of personal value, but also to a sense of purpose, an understanding of the world, self-transcendence, and the pursuit of goals (King, 2012a; Proulx & Heine, 2008; Rosso et al., 2010; Schnell, 2011; Sheldon, 2012; Steger, 2012; Van Tongeren & Green, 2010; Williams, 2012). Meaning may actually possess greater utility in explaining a wider array of events, with greater potential to influence physical and emotional well-being.

Along these lines, Lee, Cohen, Edgar, Laizner, and Gagnon (2006) implemented a meaning-based intervention in which patients with breast or colorectal cancer received four sessions that explored the meaning of the feelings and thoughts of each individual's experience within the context of past life events and future goals. Compared to the control group and baseline, the experimental group participants not only endorsed significantly higher levels of meaning, but also significantly higher levels of self-esteem, optimism, and self-efficacy post intervention (Lee et al., 2006). The results suggested that meaning-based interventions indirectly enhance other positive skills and attributes, self-esteem being one example (Lee et al., 2006).

Clearly, as with self-esteem, perceived meaning in life has potential value as a variable that can influence automatic stereotyping. Based on this review of the literature, it would follow from Terror Management Theory that if individuals perceive meaning in life, then they would have less of a need to downgrade members of out-groups as a means of bolstering their symbolic self. Thus, people who report higher levels of meaning should endorse fewer negative stereotypes toward stigmatized groups. Higher levels of perceived meaning should be associated with reduced automatic stereotyping.

In the only study of its kind, Florez, Schulenberg, and colleagues conducted a study of meaning and automatic stereotyping in a sample of White college students from a medium-sized university located in the southern United States (Florez et al., 2013). Using the Purpose in Life test - Short Form (PIL-SF; Schulenberg & Melton, 2010; Schulenberg, Schnetzer, & Buchanan, 2011) as a measure of meaning and the Person Categorization Task (Banaji & Hardin, 1996) as a measure of automatic stereotyping, they found that higher perceived meaning in life was significantly associated with longer reaction times, and thus lower automatic stereotyping ($r = .33, p < .005$). Moreover, when compared with well-established explicit measures of racial bias and social dominance, the correlational analyses revealed that meaning was more strongly associated with automatic stereotyping (a statistically significant inverse relationship) than were the other measures. The preliminary results from this study suggested that perceived meaning is an important variable to consider when examining automatic stereotyping, as it may potentially reduce tendencies for people (in this case White college students) to automatically stereotype members of other racial/ethnic groups (in this case African Americans).

From the perspective of the meaning literature, the relationship between perceived meaning and automatic stereotyping is not surprising. Meaning guides the evaluation of events and motivates individuals to maintain consistency between personal goals, beliefs, and values (King, 2012a; Proulx & Heine, 2008; Rosso et al., 2010; Schnell, 2011; Sheldon, 2012; Steger, 2012; Van Tongeren & Green, 2010; Williams, 2012). Additionally, similar to automatic stereotyping, meaning-making processes may also even occur at an automatic level, involving intuition and heuristics (Hicks, Cicero, Trent, Burton, & King, 2010; King et al., 2007; King, 2012a). Higher levels of meaning positively correlate with characteristics that will, theoretically, facilitate less automatic stereotyping, such as cognitive flexibility (King, 2012a, b), altruism

(Steger et al., 2008), self-transcendence (Peterson & Park, 2012), social relatedness (Lambert et al., 2010; Steger & Kashdan, 2013; Steger et al., 2008), appropriate social interactions (Steger et al., 2008; Weinstein et al., 1995; Wrzesniewski et al., 1997), and values-directed behavior (Hicks & King, 2009 a, b; King et al., 2006).

The Present Study

The results of the study by Florez et al. (2013) are highly promising, warranting new and increasingly rigorous research on the relationship between meaning and automatic stereotyping to better understand the nature of this relationship. Meaning appears to play a role in processes of automatic stereotyping, perhaps fostering cognitive and social processes that buffer individuals against tendencies to unconsciously label people from other groups with negative stereotypes. While these results are promising, they did not examine these variables in relation to self-esteem, which is an important concept in understanding automatic stereotyping in its own right. As there is no study in the published literature that has examined meaning, self-esteem, and automatic stereotyping in relation to one another, the purpose of this investigation was to address this gap in the literature. Specifically, this study explored the role of perceived meaning in life in automatic stereotyping, considering also self-esteem, in a sample of White undergraduate students from a university located in the southern United States. Stereotypes of White students were evaluated in relation to African Americans. The following hypotheses were examined:

Hypothesis 1: Perceived meaning in life would significantly and positively correlate with self-esteem.

Hypothesis 2: Perceived meaning in life would significantly and negatively correlate with automatic stereotyping.

Hypothesis 3: Self-esteem would significantly and negatively correlate with automatic stereotyping.

Hypothesis 4: Perceived meaning in life would significantly predict automatic stereotyping above and beyond self-esteem.

The present study contributes independently to the respective scientific literatures of meaning, self-esteem, and automatic stereotyping, and promotes new lines of research related to the underlying processes of perceiving meaning in life in association with self-esteem and processes of cognitive bias and negative stereotyping. Additionally, the study aimed to increase the understanding of how individual differences can potentially reduce tendencies to automatically stereotype members of vulnerable groups.

II. METHODS

Participants

Participants ($N = 131$) were recruited from a medium-sized university located in the southern United States. The sample size was determined on the basis of a power analysis using G power software (Erdfelder, Faul, & Buchner, 1996), with a desired power of 0.90 (Cohen, 1992). The sample originally consisted of 33 students that participated in a larger research project carried out by Dr. Tracie Stewart, an experimental faculty member in the Department of Psychology at The University of Mississippi, in collaboration with Dr. Stefan Schulenberg, a clinical faculty member also in the Department of Psychology at The University of Mississippi. The larger research project consisted of a bias-reduction training program, designed with the goal of reducing automatic negative stereotyping. Participants were recruited through the PSPM online participant recruitment system in the second part of the winter of the 2012-2013 academic year. They were randomly assigned to the control group of the study, which had three other training conditions with the goal of reducing automatic negative stereotyping. As a part of this larger research investigation, participants from the control group did not receive training and only completed the Person Categorization Task and a battery of self-report questionnaires which included measures of perceived meaning in life and self-esteem. The responses of the control group participants formed the initial basis for the present study.

However, because the sample size recruited for the original larger project was not sufficient for the purposes of the current study's statistical analyses, an additional 98 participants completed a study protocol identical to the control group in the original study (no experimental

groups). These additional participants were recruited through the Department of Psychology's SONA system, an online participant recruitment and management system (the SONA system updates the former PSPM system). The recruitment script is presented in Appendix A.

The sample consisted of a total of 131 participants that completed the administered measures. Four participants that identified themselves as non-White were excluded from the analyses. Additionally, another 17 participants were excluded due to incomplete data from the PCT task. The final sample was composed of 110 people, 64 females (58.2%) and 46 males (41.8%). The average age of the participants was 18.98 years old (SD age = 1.49) with ages ranging from 18 to 28 years old.

Measures

The Person Categorization Task (PCT; Banaji & Hardin, 1996) is a measure of automatic stereotyping of African Americans. In this task, participants are presented with a trait prime that can be of either positive or negative valence. It can either be a trait that is or is not a stereotype of African Americans, with four categories of traits (positive stereotypic and negative stereotypic of African American, and positive stereotypic and negative stereotypic of White; see Table 1). For example, for African Americans a positive stereotype is "strong", and a negative stereotype is "poor", for Whites a positive stereotypical trait is "educated", and a negative stereotypical trait is "boring".

Immediately after the trait priming, participants are prompted to categorize photographs of African American and White men by race, typing a key to indicate "African American" or "White." Latency of categorization is measured. If the participant responds faster to a categorization of an African American photograph, versus a White photograph, after a negative stereotypical trait, it indicates a higher association between that trait and race/ethnicity. For

instance, a negative stereotypic trait prime of “poor” is a stereotype of an African American, and therefore should facilitate the categorization of the photograph of an “African American” as opposed to the photograph of a “White person.” Therefore, faster categorization of African American, versus White, photos following a negative stereotypic trait prime suggests higher levels of automatic racial stereotyping of African Americans.

In the PCT participants complete two blocks of 56 trials. For each trial, participants categorize photographs of African American and White men by race after being exposed to the trait prime for 250 ms. There are eight positive and eight negative traits related to African American stereotypes, and 16 positive and 16 negative traits not related to African American stereotypes (e.g., naive). In addition, participants have the chance of practicing with eight training trials before the actual task starts. Within each block, half of the traits of each of the four categories (positive stereotypic, negative stereotypic, positive non-stereotypic, and negative non-stereotypic) are followed by a photo of an African American male and the other half by a photo of a White male. The pairings are counterbalanced such that traits paired with photos of African American men in one block were paired with photos of White men in the other block, and vice versa. Also, to decrease the effect that hand position has in the results (Walsh, Stewart, & Latu, 2013), the participant’s hand position on the task is randomized. Some participants use their left index finger for “African American” responses and right index finger for “White” responses, and others use their right index finger for “African American” responses and left index finger for “White” responses.

As for the psychometrics of the PCT as a measure of automatic stereotyping, by way of example, Kawakami and Dovidio (2001) used two different time intervals to obtain test-retest coefficients. In the first condition they administered the implicit task twice per session, and in the

second time condition, with a different group of participants, they administered the technique across a 5- to 15-day period. Responses were consistent and stable across the two administrations of the task for the two time conditions. When analyzing Pearson correlation coefficients the test-retest reliability yielded moderate reliability coefficients of .42 for the participants that answered the task twice per session, and coefficients of .60 for the participants that responded to the task several days after the first presentation (Kawakami & Dovidio, 2001). Other studies have yielded similar results (e.g., Karpinski & Steinman, 2006).

The photos that are randomly assigned across trials in the PCT are drawn from a widely used stimulus photo set (Meissner, Brigham, & Butz, 2005), and the standardization of the procedure of administration is uniform across studies (Banaji & Hardin, 1996; Kawakami, Dion, & Dovidio, 1999; Lepore & Brown, 1997; Stewart et al., 2010; Wittenbrink, Judd, & Park, 1997). The paradigm of implicit association tasks, in general, including such tasks as the PCT, is widely used, not only as a measure of automatic stereotyping, but as an indicator of implicit individual brand preferences, self-esteem, and general racial bias (Blair & Banaji, 1996; Gollwitzer et al., 2004; Karpinski & Steinman, 2006; Kawakami et al., 1998; Lane, Banaji, Nosek, & Greenwold, 2007; Payne, Jacoby, & Lambert, 2005; Payne et al., 2002).

The Purpose in Life test - Short Form (PIL-SF; Schulenberg et al., 2011) is a four-item measure of perceived meaning in life. It was developed from the original 20-item Purpose in Life test (PIL; Crumbaugh & Maholick, 1964, 1969). The PIL-SF measures the degree to which a person perceives themselves as having identified, and to some level attained, clear and meaningful goals. The PIL-SF employs a 7-point Likert-type response format ranging from 1 to 7, with the highest and lowest numbers representing extremes of a continuum. For instance, one of the items is “In achieving life goals, I have...” with 1 being “made no progress whatsoever”

and 7 being “progressed to complete fulfillment”. Anchors of each item’s response format vary depending on the content of the item. Scores of the PIL-SF range from 4 to 28. Higher scores are indicative of greater perceived meaning in life.

The PIL-SF yields reliable scores. Internal consistency coefficients are often reported in the low to mid .80s (Drescher et al., 2012; Schulenberg & Melton, 2010; Schnetzer et al., 2013; Schulenberg et al., 2011). The PIL-SF also has documented validity support, having been developed using rigorous exploratory and confirmatory factor-analytic procedures, with the support for the measure having been replicated in another study (Schulenberg & Melton, 2010; Schulenberg et al., 2011). The PIL-SF has shown convergent validity, positively and significantly correlating with other well-established measures of meaning in life (Schulenberg et al., 2011), as well as other related constructs such as life satisfaction and self-efficacy (Drescher et al., 2012). Discriminant validity of PIL-SF scores have been established, with significant and negative correlations with measures of boredom proneness, alcohol use, and depression (Schnetzer et al., 2013; Schulenberg et al., 2011).

The Rosenberg Self-Esteem Scale (RSS; Rosenberg, 1965) is a well-known and widely used measure of global self-esteem. It assesses one’s perceived sense of self-worth, value, and approval. The scale is comprised of 10 items. The RSS prompts consideration of items using a 4-point Likert-type response format ranging from 1 (strongly agree) to 4 (strongly disagree). Scores range from 10 to 40. Sample items include “I feel I have a number of good qualities” and “I certainly feel useless at times”. Higher scores suggest greater perceived self-esteem.

Regarding psychometric properties, internal consistency reliability coefficients typically range from the high .70s to the high .80s (Gray-Little, Williams, & Hancock, 1997; Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002; Rosenberg, 1965; Schmitt & Allik, 2005). As for

the validity of scores, as expected, the RSS is significantly and negatively correlated with anxiety, depression, and unpleasant affect (Dagnan & Sandhu, 1999; Rosenberg, 1965; Schimmack & Diener, 2003), and significantly and positively correlated with measures of life-satisfaction, happiness, pleasant affect, perceived meaning, and social achievement (Dagnan & Sandhu, 1999; Lee et al., 2006; Rosenberg, 1965; Schimmack & Diener, 2003; Yuki, Sato, Takemura, & Oishi, 2013).

Procedures

The study protocol was approved by The University of Mississippi's Institutional Review Board. Data collection, as noted previously, was conducted at two different junctures, during the Spring and Fall semesters of 2013 (see Appendix A for recruitment advertisement).

Each session was conducted following the same procedures, with sessions lasting approximately 40 minutes. When the participants arrived for their scheduled time in the lab room, the experimenter assigned each of them to a computer. The consent form was presented (see consent form, Appendix B). Participants initially were deceived about the purpose of the study in order to avoid intentions to counteract the automatic stereotyping activation. Therefore, the experimenter told them that the study's objective was to know more about how people categorize individuals from different social groups, being particularly interested in the speed of categorizing, while being as accurate as possible (see Appendix C for instructions). To the participants' knowledge, the trait prime was a distracter stimulus unrelated with the identification task.

Participants were then instructed with regard to hand placement on the keyboard, as well as to looking at the computer screen for additional prompts. To control for hand position, participants were randomly distributed to computers with different hand placement as they

entered the lab. Sixty-six of the participants were assigned to normal hand placement and forty-four participants were assigned to a computer that used reverse hand placement. Before starting, the respondents had the opportunity to ask questions for clarification. The instructions presented on the computer screen included reminders about the aim of the task. Next, participants had the opportunity to complete eight practice trials prior to beginning the actual 56 trial task (see Appendix C).

After the PCT, participants were asked to complete the PIL-SF and the RSS, which were administered in that order, along with demographics questions and other measures (see Appendices D and E). All the measures were administered on the computer. When finished, the experimenter explained to the participants the debriefing document, which contained the objective of the task and the overall purpose of the study (see Appendix F). Participants were then thanked and dismissed upon completion of the session, as well as awarded an hour of course credit or extra credit for their participation.

After data collection, statistical analyses were performed using SPSS statistical software. For the PIL-SF and the RSS, univariate outliers were identified through standardized scores and multivariate outliers through Mahalanobis distance (Meyers, Gamst, & Guarino, 2013). For the PCT, scores were calculated as response latencies (reaction times) across task trials. Response latencies were log-transformed to control for outliers. Specific data points identified as outliers were considered for exclusion.

Cronbach's alpha was calculated to assess the internal consistency of PIL-SF and RSS scores. Descriptive statistics were also calculated for each of the study variables. For the PCT task, the difference of scores of the reaction times when categorizing targets as African American minus the reaction times when categorizing targets as White were obtained. These

scores were created for all the combinations of trait primes (positive, negative, stereotypic, and non-stereotypic) to assess for the presence of automatic stereotyping in each category. Thus, to detect negative stereotype activation towards African Americans, the reaction time for negative African American-stereotypic traits paired with African American photos was subtracted by the reaction time obtained with the photos of White people when participants were exposed to the same stereotypical traits.

To analyze hypotheses 1, 2, and 3, bivariate correlations were calculated using the total scores of the PIL-SF, the total scores of the RSS, and the difference scores of response latencies obtained for the PCT. For the fourth hypothesis, to determine whether perceived meaning in life predicts automatic stereotyping above and beyond self-esteem, a standard multiple linear regression was the statistical procedure selected.

III. RESULTS

Preliminary Analyses

Due to errors in the PCT computational system, in which the program failed to record all the responses of some individuals, 17 participants were excluded from the analyses.

In terms of the PCT, each correct response in the trials of the categorization task was transformed into a reaction time calculated as a response latency across task trials. Outliers were identified when the participant's response time exceeded three standard deviations when compared to the average response time (assessed in ms) for the overall participants for each trial, and when a participant took less than 300 ms to respond to a trial (Clow & Esses, 2007; Neely, 1977). The assumption is that a participant that takes significantly longer to respond might be able to intentionally counteract the stereotype. In contrast, it is considered that at least 300 ms are needed for a participant to process the task of each trial (Clow & Esses, 2007; Neely, 1977). Response latencies or reaction times were then log-transformed to control for normality of data and other outliers (Baayen & Milin, 2010). Outliers in reaction times were treated as missing values.

No data were missing for the PIL-SF and RSS scales. For the PIL-SF and the RSS scales, univariate outliers were identified through z -scores. Any individual total score with a z -score above three or below negative three was considered an extreme value (Kline, 2010). The z -scores for the PIL-SF and the RSS were not greater or lower than three standard deviations from the mean, and thus, none of the scores were treated as outliers. Multivariate outliers were identified by calculating Mahalanobis distance. Each case was evaluated using the chi-square distribution

with an alpha level of .001 and two degrees of freedom. Cases that reached this significance threshold were then analyzed as possible candidates for elimination (Meyers et al., 2013). Based on these criteria, four multivariate outliers were identified. Since their scores for both the PIL-SF and the RSS were within an expected range of scores, the participants were not excluded from the analyses. The final sample was comprised of 110 participants for each of the measures of interest.

After data cleaning, for the PCT log-transformed scores, a mean of the response latencies of each participant following all combinations of trait primes (positive stereotypic and non-stereotypic, and negative stereotypic and non-stereotypic) was computed. All the analyses were run using the log-transformed means and scores. These data are presented in Table 2. The log mean for each variable is presented as well as the difference between the reaction times for each category. For each of the categories (positive stereotypic and non-stereotypic, and negative stereotypic and non-stereotypic) the reaction times are presented when the trait is followed by an African American photo in contrast to when it is followed by a photo of a White person. Negative scores indicate a stronger stereotypical association toward the targeted race/ethnicity.

For the purpose of this study, the response latencies of interest were those indicative of negative stereotype activation towards African Americans. Thus, for each participant the dependent variable was the difference score between the mean of the reaction times to African American photos subtracted by the reaction times to White photos, when following a negative African American stereotype. A negative difference between the means suggests the presence of negative stereotypes toward African Americans, indicating that overall participants responded faster to the African American photo, as opposed to the White photo, following the presentation of a negative African American stereotype.

The distribution of the difference scores for negative stereotypes of African Americans (reaction time when categorizing an African American photo minus the reaction time when categorizing a White photo) had an asymmetrical distribution with a negative skewness of -1.224 log_ms (standard error = .230 log_ms) (see Figure 1). The minimum log-mean reaction time was -.32 log_ms and the maximum log-mean reaction time was .17 log_ms (a range of .49 ms). The mean of the difference of scores was -.02 log_ms ($SD = .01$), overall suggesting activation of negative automatic stereotyping of African Americans.

After analyzing the reaction times of the PCT, internal consistency reliability coefficients were calculated for the PIL-SF and the RSS. Cronbach's alpha coefficients for the two scales were .77 and .76, respectively. These coefficients suggested respectable internal consistency of responses for both scales (DeVellis, 2012). The total scores for the PIL-SF and the RSS were computed for each participant. Means, standard deviations, medians, and minimum and maximum values were also calculated and are presented in Table 3.

The PIL-SF distribution of scores had an asymmetrical distribution with a negative skewness of -.514 (standard error = .230). No total scores were located at the lower range of values (see Figure 2). The minimum PIL-SF total score was 16 and the maximum total score was 28. The PIL-SF total score mean was 23.74 ($SD = 0.26$). These data suggest that the sample overall reported high levels of perceived meaning in life, and the data were consistent with previous samples of college students. Of the PIL-SF total scores, 50% were below 24 and 50% were above 24. Moreover, 75% of the PIL-SF total scores fell between 22 and 27 points (28 being the maximum score possible), further supporting the interpretation that the sample overall was reporting meaning at the higher end of the scale.

With respect to RSS scores, the data distribution was also negatively skewed ($r = -.413$, standard error = $.230$) indicating an asymmetrical distribution with fewer total scores at the lower end of the scale (see Figure 3). The mean of the RSS total scores was 30.19 ($SD = .51$), suggesting that overall the sample reported medium to high levels of self-esteem. Of the RSS total scores, 50% of the scores reported were below 31 and 50% of the scores reported were above 31. Moreover, 75% of the scores fell between 27 and 35 points. For the RSS, the minimum score was 17 and the maximum score was 38. Total RSS scores showed a range of 21 points. Overall, descriptive statistics indicate that participants reported global self-esteem at different levels of the scale, with more total values falling within the medium to upper range of the scale.

After calculating descriptive data for each measure, coupled with the data suggesting the activation of negative automatic stereotyping of African Americans, the main hypotheses of the study were analyzed.

Primary Analyses

The first hypothesis of this study asserted that meaning in life and self-esteem would be positively and significantly correlated. The second and third hypotheses asserted that meaning and self-esteem would correlate negatively and significantly with automatic stereotyping. To analyze hypotheses 1, 2, and 3, bivariate correlations were calculated using the PIL-SF and RSS scores, as well as the difference scores of response latencies obtained for the PCT when participants were primed with negative stereotypes of African Americans. Table 4 displays the Pearson correlations for the interrelationships of these variables.

As expected in hypothesis 1, meaning and self-esteem positively and significantly correlated at $.46$ ($p < .01$), a moderate correlation (Meyers et al., 2013). Higher levels of

perceived meaning in life were associated with higher levels of self-esteem. Regarding the relationships between meaning and the PCT task, as well as self-esteem and the PCT task, results failed to support hypotheses 2 and 3. The correlations between meaning in life and automatic stereotyping ($r = -.05, p = .30$), and between self-esteem and automatic stereotyping ($r = .015, p = .44$), were not statistically significant.

The fourth hypothesis asserted that, using standard multiple linear regression, meaning in life would prove to uniquely and significantly predict lower levels of automatic stereotyping above and beyond self-esteem. To be thorough, a standard multiple linear regression was run to assess hypothesis 4, even though hypotheses 2 and 3 were not supported. The results of the regression model indicated that PIL-SF scores and RSS scores did not significantly predict automatic stereotyping ($R^2 = .01, F(2, 109) = .25, p = .78$). As for the independent predictor values, both meaning in life ($\beta = -.008, t(107) = -.66, p = .50$) and self-esteem ($\beta = .007, t(107) = .457, p = .65$) were not statistically significant contributors to the model. Thus, hypothesis 4 was rejected with no evidence supporting perceived meaning or self-esteem as significant predictors of lower levels of automatic stereotyping.

Post-hoc Analyses

To further explore the interrelationships amongst the variables of the study, a median-split was used on the negative automatic stereotyping variable. Prior research has found different correlates with intergroup bias for individuals with higher versus lower intergroup bias (e.g., Hodson & Dovidio, 2001; Monteith et al., 1998). In addition, a number of studies have also found different relationships between anti-bias interventions and resultant levels of bias for individuals with high versus low levels of prejudice individuals (Hodson & Dovidio, 2001; Monteith et al., 1998). Based on the literature review, the automatic stereotyping scores were

divided into two groups, participants with higher levels of negative automatic stereotyping (scores below the median) and participants with lower levels of negative automatic stereotyping (scores above the median). The median score for negative automatic stereotyping was .0108 log_ms. The group of participants with higher levels of automatic stereotyping had a mean of -.06 log_ms ($SD = .67, n = 55$). The group of participants with lower levels of automatic stereotyping had a mean of .03 log_ms ($SD = .04, n = 55$).

Independent samples *t*-tests were calculated to assess whether there were statistically significant differences in the variable scores for the two groups (see Table 5). In terms of negative automatic stereotyping, there was a statistically significant difference between the reaction time means for the two groups, $t(108) = -9.12, p < .001$. There was also a statistically significant difference for the PIL-SF scores when comparing the higher and lower automatic stereotyping conditions, $t(108) = 3.37, p = .001$. The group with higher negative automatic stereotyping evidenced higher perceived meaning life ($M = 24.58, SD = 2.10$) than the lower negative automatic stereotyping group ($M = 22.90, SD = 3.02$). There was not a statistically significant difference in RSS scores when compared across the high and low automatic stereotyping conditions.

Bivariate correlations were computed for the high and low negative automatic stereotyping groups (see Table 6). Positive and statistically significant moderate correlations were found between perceived meaning in life scores and self-esteem scores for both groups (higher negative automatic stereotyping $r = .42, p = .001$; lower negative automatic stereotyping $r = .46, p < .001$). Additionally, for the group of White participants that endorsed lower negative automatic stereotyping towards African Americans, there was a statistically significant, small positive association between reaction times and scores of perceived meaning in life ($r = .26, p =$

.03). Longer reaction times (and thus less automatic stereotyping) were associated with higher meaning scores. For the group of participants with higher levels of negative automatic stereotyping there was not a statistically significant association with PIL-SF scores ($r = .21, p = .06$). Furthermore, there was not a statistically significant association in either of the groups with respect to RSS scores and automatic stereotyping scores (higher negative automatic stereotyping $r = .14, p = .16$; lower negative automatic stereotyping $r = .19, p = .08$).

Two additional standard multiple linear regressions, one for each group, were conducted with PIL-SF and RSS scores as predictors of negative automatic stereotyping. The aim for these analyses was to examine hypotheses 4 using the median-split procedure. Neither of the models was statistically significant (higher negative automatic stereotyping $R^2 = .05, F(2, 54) = 1.27, p = .29$; lower negative automatic stereotyping $R^2 = .07, F(2, 54) = 2.00, p = .15$). Regarding the unique contributions of each variable, meaning in life (higher negative automatic stereotyping $\beta = -.02, t(52) = 1.242, p = .22$; lower negative automatic stereotyping $\beta = .01, t(52) = 1.42, p = .161$) and self-esteem (higher negative automatic stereotyping $\beta = .01, t(52) = .39, p = .70$; lower negative automatic stereotyping $\beta = .01, t(52) = .59, p = .66$) did not individually predict automatic stereotyping to a statistically significant degree. In conclusion, when using median-split analyses of participants with higher or low negative automatic stereotyping scores, hypothesis 4 was also rejected. There was no statistically significant support for meaning or self-esteem predicting negative automatic stereotyping.

In summary, post-hoc analyses based on the median-split method further supported hypothesis 1 for participants with high and low levels of negative automatic stereotyping. Hypothesis 2 was supported for participants with lower levels of negative automatic stereotyping

of African Americans. Hypotheses 3 and 4 were not supported for either the high or low negative automatic stereotyping group.

IV. DISCUSSION

A primary aim of this study was to determine the association between perceived meaning in life and negative automatic stereotyping. It was expected that higher perceived meaning in life scores would be associated with less negative automatic stereotyping of African Americans. It was also expected that meaning would be a stronger predictor of lower levels of negative automatic stereotyping than self-esteem, a variable identified in the literature as a moderator of automatic intergroup biases (Aberson, 1999; Arndt, 2012; Pyszczynski et al., 2004; Routledge et al., 2010). The results of the study's initial analyses did not yield a statistically significant association between meaning in life and negative automatic stereotyping. Self-esteem was also not significantly associated with negative automatic stereotyping. The regression model with meaning and self-esteem as predictors of negative automatic stereotyping was not significant, with meaning and self-esteem not predictive of lower levels of automatic stereotyping to a statistically significant degree. To gain a better understanding of the present findings, each of the hypotheses will be presented, followed by in-depth discussion of the implications of the post-hoc analyses. Finally, limitations will be presented along with directions for research.

Primary Hypotheses

The first hypothesis asserted that perceived meaning in life scores and self-esteem scores would be significantly and positively correlated with one another. This hypothesis was supported. People reporting greater meaning also tended to report higher self-esteem. The association between meaning in life and self-esteem is consistent with the literature, having been documented in several studies (Debats, 1996; Halama, 2003; Schlegel et al., 2011; Steger &

Frazier, 2005). From the perspective of the meaning maintenance model, self-esteem is a vital part of individuals' perceived meaning. Considering oneself as a person of worth is necessary, but not necessarily sufficient, to living a meaningful life (Van Tongeren & Green, 2010). From this perspective, people with higher levels of meaning are more likely to engage in situations and behaviors that bring joy and satisfaction to their lives, thus enhancing sense of self-worth. At the same time, individuals that have a higher sense of self-value and consider themselves as competent are more likely to perceive their lives as meaningful.

The second hypothesis of the study, which predicted a negative and statistically significant correlation between meaning in life and negative automatic stereotyping, was not supported in the initial analyses. In this sample of White college students, the analyses did not replicate the finding by Florez et al. (2013). In their study, they found that perceived meaning in life was moderately associated with less negative automatic stereotyping towards African Americans ($r = .33, p < .005$). Furthermore, in the initial results of the present study the direction of the correlation was not as expected. Although the correlation was small and not statistically significant, the results indicated that at higher levels of meaning in life participants were faster at responding to stereotypic-congruent primes.

There are several theoretical issues and methodological aspects to this study that could have influenced the results. First, in the study by Florez et al. (2013), the researchers documented the statistically significant association between meaning and negative automatic stereotyping when the PIL-SF was administered before the session in which the PCT was conducted. In the present study, the PIL-SF was administered immediately after the participants completed the PCT measure, and thus after they were exposed to automatic activation of stereotypes. Findings on the judgments of meaning have found that individual self-reports can be affected by current

mood, social situations, and events that threaten the maintenance of meaning (Gillies & Neimeyer, 2006; Hicks & King, 2009a, 2009b; King, 2012a; Park, 2010; Schlegel et al., 2011). Additionally, the meaning literature suggests that individuals are constantly involved in automatic processes of meaning evaluation in order to engage in behaviors that are aligned with beliefs, values, and goals, thereby promoting the maintenance of meaning (Heine et al., 2006; Park, 2010; Pinel et al., 2006; Williams, 2012). When people perceive threats to meaning (beliefs, values, and goals) they engage in overcompensation strategies in order to sustain meaning (McGregor et al., 2001; Pinel et al., 2006; Pyszczynski et al., 2004; Williams, 2012).

Considering that the PCT activates automatic negative beliefs stereotypical of other races, in this case with respect to Whites toward African Americans (and assuming that for some participants these stereotypes might contradict personal values and beliefs), activation of stereotypes through the PCT task could have functioned as a threat to meaning for some students. In such cases, it follows that some participants, particularly those whose personal values are opposed to endorsing negative stereotypes, automatically engaged in efforts to compensate for a potential threat to meaning, and thus altering reports of meaning (McGregor et al., 2001; Pinel et al., 2006; Pyszczynski et al., 2004; Williams, 2012). Consequently, judgments of meaning could have been affected by previous exposure to automatic stereotypes, which may help to explain the differences in results between the current study and the Florez et al. (2013) study.

Regarding the unexpected direction of the correlation (which suggested that higher meaning in life is associated with higher negative automatic stereotyping), there are some issues related to the reliability and validity of measures of implicit stereotyping that could partially explain the findings (Greenwald & Banaji, 1995; Spears & Tausch, 2013). In the literature of automatic stereotyping there have been several mixed results on the association of automatic

stereotyping and other constructs (e.g., Dambrun & Guimond, 2004; Karpinski & Hilton, 2001; Spears & Tausch, 2013). For instance, even when exploring the relationship between automatic stereotyping and explicit stereotyping, research findings indicate different directions in terms of the correlations (Dambrun & Guimond, 2004; Karpinski & Hilton, 2001; Spears & Tausch, 2013). Some authors suggest that the contradictory results can be partially attributed to the lack of support regarding the reliability of the implicit tasks to assess automatic cognitions (Karpinski & Steinman, 2006; Kawakami & Dovidio, 2001). Furthermore, there remains an active debate regarding what these tests are assessing, and there is not a consensus on the validity of the implicit association tasks as measures of judgments towards a target object (Amodio & Devine, 2006; Dambrun & Guimond, 2004). Some researches argue that measures based on the implicit association paradigm only assess the degree in which the person has access to the stereotype, and does not necessarily serve as a means of assessing the process of implicit stereotyping (Karpinski & Hilton, 2001; Uhlmann & Nosek, 2012). For these reasons, some authors have suggested that the distinction between the cognitive and affective components of bias might play an important role in predicting whether the stereotypes will affect judgment and expressions of racism (Amodio & Devine, 2006). Thus, it is argued that an evaluative component, in which an affective process plays a role, needs to be included in research designs in order to accurately assess automatic stereotyping (Blair, 2001; Fazio & Olson, 2003; Greenwald et al., 2002). The debate as to the validity of implicit measures of automatic stereotyping further highlights the difficulties of assessing a complex phenomenon (Amodio & Devine, 2006; Blair, 2001; Fazio & Olson, 2003).

An alternative explanation for the mixed findings on automatic stereotyping can be elaborated from the broader literature on stereotype formation and the study of social bias

(Pendry, 2013; Spears & Tausch, 2013). The literature on stereotype formation argues that intergroup biases, and thus processes of automatic stereotyping, are strongly associated with social processes engrained in every group of individuals, cultural socialization to favor and protect one's own group (Pendry, 2013; Spears & Tausch, 2013; Uhlmann & Nosek, 2012). Some of these processes correspond to the out-group homogeneity effect (Brauer, 2001), the illusory correlation effect (Murphy et al., 2011), and the ultimate attribution error (Coleman, 2013; Spears & Tausch, 2013). The out-group homogeneity effect refers to the tendency to perceive other groups as more homogeneous than the in-group (Brauer, 2001). The illusory correlation is the tendency to overstate a relationship between two variables, when in fact the variables are not associated in any meaningful way (e.g., White people overestimating the arrest rate of African Americans) (Murphy et al., 2011). And, the ultimate attribution error proposes that individuals tend to explain the negative behavior of out-group members in terms of dispositional traits, while favoring the in-group in their attributions (see Coleman, 2013). Based on these theories, even when there is evidence indicating that individual differences can further be associated with automatic stereotyping (Fiske, 2000; Monteith, 1993; Moskowitz et al., 1999), group processes, social norms/socialization, and mainstream in-group beliefs about other groups could potentially affect the pervasiveness of automatic stereotyping, and therefore such variables should be incorporated into studies of this phenomenon (Bodenhausen & Richeson, 2010; Kawakami et al., 2000; Nosek & Hansen, 2008; Pendry, 2013; Spears & Tausch, 2013; Uhlmann & Nosek, 2012). From this perspective, even though meaning potentially plays a role in processes of automatic stereotyping, there are some group and social processes that also play a major role, thus necessitating the need for increasingly complex study designs.

Along these same lines, when considering explicit stereotyping, prejudice, and discriminatory behavior from a meaning making perspective, it could be argued that some individuals justify their prejudiced beliefs from a meaning framework (Heine et al., 2006; Park, 2010). Taking into account that individuals are constantly and automatically evaluating meaning (Van Tongeren & Green, 2010), for people who hold higher stereotypical beliefs processes of meaning maintenance would have to be aligned to those beliefs in order to sustain meaning (Sheldon, 2012; Van den Bos, 2009; Van Tongeren & Green, 2010). In other words, individuals negatively biased against other groups could report meaning in doing so. They can further justify their behaviors through social norms or traditional beliefs of their in-group. Given the complex nature of these and related processes, additional research is warranted to better illuminate the role of meaning in automatic stereotyping.

As for hypothesis 3, the initial results also did not support previous findings in the literature indicating that self-esteem is a moderator of negative automatic stereotyping. However, in the case of self-esteem, there are also mixed results regarding the association of self-esteem and negative automatic stereotyping (Aberson et al., 2000; Baldwin & Wesley, 1996; Crocker & Schwartz, 1985; Gramzow & Gaertner, 2005; Hunter et al., 2011; Rudman et al., 2007; Schimel et al., 1999). In the present study there was not a statistically significant association between self-esteem and negative automatic stereotyping. The same logic previously applied to explain the lack of significance between meaning and self-esteem is also useful in this instance. Consistent with Terror Management Theory, when people are faced with a situation that threatens their sense of self-esteem, they engage in overcompensating behaviors in order to enhance self-esteem. One of these overcompensating behaviors is reporting higher levels of self-esteem (Arndt et al., 2002; Greenberg et al., 1992; Routledge & Arndt, 2008). Taking into account that

the PCT activates automatic negative stereotypes of both Whites and African Americans, it follows that for some participants the activation of these beliefs would be evaluated as threats to their self-esteem. Consequently, self-reports of self-esteem after exposure to the PCT might not be a reliable measure of a participant's actual level of self-esteem. From this argument the administration of the RSS after the PCT could have affected the significance of the results (or in this case the lack thereof).

Additionally, studies of self-esteem and automatic intergroup bias that have documented significant results often include a condition in which experimenters intentionally trigger death anxiety or threats to self-esteem (Arndt et al., 2002; Greenberg et al., 1992; Routledge & Arndt, 2008; Sinclair & Kunda, 1999; Sinclair et al., 2005). From the perspective of Terror Management Theory, death anxiety is the mechanism that activates the role of self-esteem in intergroup bias (Aberson, 1999; Arndt, 2012; Pyszczynski et al., 2004; Routledge et al., 2010). When people face death anxiety they use information on self-esteem to cope with death realization (Aberson, 1999; Arndt, 2012; Pyszczynski et al., 2004; Routledge et al., 2010). Furthermore, when judging an out-group while facing death anxiety, people with low levels of self-esteem are more likely to display more intergroup bias as a way of coping with death anxiety and as a compensation for having low self-esteem (Arndt et al., 2002; Greenberg et al., 1992; Routledge & Arndt, 2008). Thus, it could be argued that when participants are not exposed to death anxiety or explicit threats to personal self-esteem participants do not rely on information about self-esteem to judge other groups. Although the PCT could potentially have threatened participant's self-esteem, the effect that the PCT had on self-esteem (or meaning) is ultimately unknown and thus cannot be estimated. Rather, the aforementioned explanations are hypothetical in nature, warranting further inquiry.

Finally, hypothesis 4 (meaning predicts negative automatic stereotyping above and beyond self-esteem) was also disconfirmed. The regression model of perceived meaning in life and self-esteem as predictors of negative automatic stereotyping was not supported. Moreover, neither of these variables (perceived meaning, self-esteem) was a statistically significant predictor of automatic stereotyping when examined individually. This finding was contrary to the hypothesis but not unexpected considering the lack of statistically significant correlations between negative automatic stereotyping and the predictor variables.

Post-hoc Analyses

To better understand the nature of the interrelationships of the study variables, post-hoc analyses were conducted using the median-split method with negative automatic stereotyping scores. In terms of the hypothesis when using the median-split method, once again, hypothesis 1 was confirmed, with positive and significant relationships between self-esteem and perceived meaning in life for both the high and low negative automatic stereotyping groups. Additionally, median-split analyses partially supported hypothesis 2 for participants with low negative automatic stereotyping. In this group of participants, the findings indicated that higher levels of perceived meaning were actually associated with slower reaction times to negative stereotypic associations. Living more in accordance with one's values, beliefs, and goals, that is, perceptions of life as being meaningful, are associated with less negative automatic stereotyping in people with low levels of negative automatic stereotyping. These findings are supported by the automatic stereotyping literature. Moskowitz et al. (1999) found that people with lower levels of automatic stereotyping tend to activate chronic egalitarian goals during stereotyping tasks that help to counteract automatic processes of stereotyping. Furthermore, Sassenberg and Moskowitz (2005) found that by making individuals engage in tasks that called for creativity, they could

decrease stereotypic associations among participants. These results suggest that automatic stereotyping can be reduced or regulated by activating implicit goals, such as the goal of being creative, in individuals (implicitly controlled operation). Furthermore, implicit stereotyping can be diminished even when the goal is not related to a specific category (e.g., being egalitarian), but also when people possess a general goal to think differently (Sassenberg & Moskowitz, 2005). Based on these findings, automatic stereotyping appears to be goal dependent, in other words, influenced by goal-driven behavior. Whether an individual experiences lower or higher levels of automatic stereotyping might be moderated based on whether there is a specific goal in place that can further help to overcome automatic stereotypes (Pendry, 2013).

Considering that the construct of meaning in life itself is associated with engaging in goals that are consistent with values, and in directing behaviors in line with these goals, people with higher levels of meaning are more likely to sustain goals consistent with personal beliefs and to attribute more significance to these goals (King, 2012a; Proulx & Heine, 2008; Rosso et al., 2010; Schnell, 2011; Sheldon, 2012; Steger, 2012; Van Tongeren & Green, 2010; Williams, 2012). At the same time, as indicated previously, higher levels of meaning in life facilitate social and cognitive processes such as altruism (Steger et al., 2008), self-transcendence (Peterson & Park, 2012), social relatedness (Lambert et al., 2010; Steger & Kashdan, 2013; Steger et al., 2008), and cognitive flexibility (King, 2012a, b). Theoretically, these social and cognitive processes could facilitate the cultivation of implicit goals that may function to override automatic stereotyping. Therefore, for people endorsing low levels of negative automatic stereotyping, meaning in life likely plays a more important role because for this group the process of automatic stereotyping is more goal dependent. With lower levels of automatic stereotyping, individuals are more likely to activate intrinsic beliefs and values to counteract the automatic activation of

stereotypes inconsistent with their meaning. Alternatively, for people with higher levels of automatic stereotyping, the process of stereotyping is more pervasive, automatic, and goal independent (Pendry, 2013). These individuals hypothetically do not have the intrinsic motivation to overcome stereotypes and thus meaning would not be as significantly associated with processes of automatic stereotyping. In contrast, for individuals with lower automatic stereotyping meaning could play a more important role as a buffer to the effects of explicit stereotyping, that is endorsing negative beliefs against African Americans (Florez et al., 2013).

Regarding hypothesis 3, median split analyses did not indicate a statistically significant correlation between self-esteem and negative automatic stereotyping for participant groups with high and low levels of automatic stereotyping. Moreover, for both groups correlational analyses suggested a stronger correlation between meaning and negative automatic stereotyping than between self-esteem and negative automatic stereotyping. These findings may further suggest that meaning could potentially play a larger role in predicting lower levels of automatic stereotyping than self-esteem. Given that meaning encompasses areas of goals, beliefs, and values that include, but are not limited to, a sense of self-worth, it would be expected that meaning would have a stronger association with automatic stereotyping than self-esteem (Van Tongeren & Green, 2010). As noted previously, self-esteem may be related to lesser automatic stereotyping in a more narrow range of situations, such as when specific threats to self-esteem are activated (Arndt et al., 2002; Greenberg et al., 1992; Routledge & Arndt, 2008; Sinclair & Kunda, 1999; Sinclair et al., 2005). In turn, meaning may have a stronger relationship with processes of automatic stereotyping across a wider range of situations. The assertions generated from this study, while logical, would benefit from additional research.

Median-split procedures were also used to examine hypothesis 4 in greater depth. For both groups, meaning and self-esteem were not statistically significant predictors of automatic stereotyping. The overall model of perceived meaning and self-esteem as predictors of negative automatic stereotyping was not statistically significant. Such findings affirm the complexity involved in the study of automatic stereotyping and intergroup bias. Next, study limitations are discussed, and recommendations for research are offered.

Limitations and Directions for Research

Based on the scope and methodology of the present study, no ultimate assumptions may be made as to the relationship between perceived meaning, self-esteem, and automatic stereotyping. Because this is a correlational study, statements as to causation may not be advanced. Increasingly rigorous experimental designs are necessary to validate causal assertions. The arguments explaining the unexpected findings, while logical, also need to be confirmed in future studies. One area that should be further examined relates to the order of measures administered. The effects of the PCT on the responses to the PIL-SF and the RSS are unknown. In future studies, efforts should be made to control for the potential impact of the PCT on the participant responses to other measures. The hypotheses that levels of meaning and self-esteem are affected by the presentation of the PCT need to be confirmed. Considering that the PCT activates automatic stereotypes that are out of the awareness of the individual, it could conceivably affect judgments of meaning and self-esteem, priming specific attitudes. It would be useful to collect data on variables such as meaning and self-esteem before the PCT administration, as well as after the PCT administration, to better understand how these measures relate to one another.

The hypothesis that perceived meaning in life could play a distinct role in individuals with higher and lower automatic stereotyping needs to be studied further as well. Although the use of the median-split procedure has been recommended in some instances (DeCoster, Iselin, & Gallucci, 2009), and it has been adapted in several studies of stereotyping and prejudice (Johnston, 2006; Lepore & Brown, 2002; Locke, McLeod, & Walker, 1994), the use of the median-split of a continuous variable has been criticized by several methodologists (DeCoster et al., 2009). Dichotomization of variables causes a reduction in the variability of the sample and weakens the estimated size of the association of the variables, adding error to the significance of results of the estimated relations (DeCoster et al., 2009). As a result, the findings obtained for the median-split analysis are said to contain a higher degree of error and therefore should be interpreted with greater caution. While the median-split procedure was useful in the current instance to better understand the nature of the study variables, there exist other, more advanced statistical techniques that can be implemented to analyze the data without dichotomizing the sample. A broader range of PIL-SF and RSS scores might also increase the statistical validity of the conclusions and better inform this area of study.

Other limitations of the present study relate to the measurement of the variables of interest, as well as the lack of measurement of confounding variables. In the present study internal consistency coefficients for both the RSS and the PIL-SF, while good, were not as high as previously reported in other studies (DeVellis, 2012; Drescher et al., 2012; Rosenberg, 1965; Schmitt & Allik, 2005; Schnetzer et al., 2013; Schulenberg & Melton, 2010; Schulenberg et al., 2011). One explanation for these results lies in the potential impact of the PCT measure on the judgments of participants. Furthermore, some question has been raised as to the reliability and validity of implicit stereotyping tasks such as the PCT. Some tasks evidence low reliability and

there remains a debate as to what constructs are actually being measured. Thus, the incorporation of other methods to assess automatic stereotyping and automatic prejudice would be beneficial in future research.

Additionally, because the study of meaning and automatic stereotyping is a novel area of research, it is recommended for future studies to include different measures of meaning (and self-esteem) to provide greater depth as to the nature of the relationships. The present study included only one brief measure of meaning and one brief measure of self-esteem. Both concepts are complex and multifaceted, and while both measures have garnered psychometric support for their use, there is the likelihood that they disregard different dimensions of these constructs. For instance, in the field of meaning it would be worthwhile to include other measures that directly assess the absence of meaning (theoretically related to death anxiety), sources of meaning, the search for meaning, and values. The incorporation of such aspects of meaning could yield important information about the relationship between meaning and automatic stereotyping. In addition, when measuring self-esteem, future studies would benefit from incorporating measures of state self-esteem, implicit self-esteem, and collective self-esteem. The study of such aspects of self-esteem would further inform the understanding of how this variable relates to automatic stereotyping. In future research studies, it is also relevant to clarify if individual differences in levels of meaning in life could have an impact on the relationship between self-esteem and automatic stereotyping.

In terms of other confounding variables that could have impacted the results, the present study did not account for social processes embedded in automatic stereotyping. Such processes include racial development, group identification, social desirability, social norms, and experiences of diversity with African Americans. Additionally, as another research line, it would

be worthwhile to investigate the process of meaning making, in conjunction with perceived meaning, in studies of explicit stereotyping, prejudice, and discrimination. Future studies should focus on incorporating additional means to assess such processes and variables.

Similarly, some other factors that warrant consideration include religious beliefs, values, age, and individual differences, such as personal need for structure, egalitarianism, and dogmatism. Moreover, studies of self-transcendence, sources of values, prosocial behavior, and cognitive flexibility could further contribute to the understanding of the active component of meaning that may serve to facilitate less automatic stereotyping. It is also worth investigating whether the relationship between death anxiety and automatic stereotyping, as suggested by Terror Management Theory, is moderated by meaning in life, as was proposed with self-esteem. The inclusion of these variables in future research would better inform the nature of the relationship between automatic stereotyping and meaning, as was initially reported by Florez et al. (2013).

Regarding the demographics of the participants, the homogeneous nature of the sample does not allow for generalization of results to other populations outside of White college students attending a medium-sized university located in the southern United States. Research on the role of meaning in predicting automatic stereotyping should be expanded to include people of different ages, races/ethnicities, regions, and cultures, as well as processes of meaning and automatic stereotyping towards members of other minority groups commonly affected by negative stereotypes (women, gay and lesbian individuals, and members of other racial-ethnic groups). Such research would enhance understanding as to how these processes are similar or different across various contexts and in various populations.

Furthermore, the study of these variables necessitates increasingly novel, rigorous, and systematic research. For future studies, a major line of research worth studying is the potential causal relationship between meaning and automatic stereotyping. Future experiments, including manipulation of perceived meaning and automatic stereotyping across different conditions, would, in all likelihood, enhance insight into whether and how meaning may play a role in reducing automatic stereotyping. For example, could lower automatic stereotyping open the door to higher perceived meaning?

Finally, while the statistical procedures employed in the present study were useful, a more in-depth, advanced statistical examination of the data might yield additional information as to the interrelationships between the variables of interest. For instance, to correct for the margin of error of the measures, longitudinal or structural equation approaches may yield more significant effects (MacCallum & Austin, 2000).

In conclusion, although the primary analyses did not support the main hypotheses as to meaning being associated with lower levels of automatic stereotyping, and post-hoc analyses only supported the relationship partially, there remains a strong theoretical argument that warrants future research (Florez et al., 2013). This specific avenue of empirical inquiry is vital in furthering our understanding of both perceived meaning and automatic stereotyping. Taking into account the pervasiveness and complexity of automatic stereotyping, if meaning is in fact a variable associated with low automatic stereotyping, meaning-based interventions may have the added benefit of reducing automatic stereotyping, and alternatively, some interventions designed to reduce automatic stereotyping may enhance perceived meaning. Additionally, the incorporation of meaning in the study of automatic stereotyping has significant potential to

augment relationships and interactions among people across contexts and populations, ultimately reducing the negative repercussions of automatic stereotyping.

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LIST OF APPENDICES

APPENDIX A: TABLES

Table 1.

Traits Presented in the Person Categorization Task

African American Stereotypic negative	African American Stereotypic positive	White Stereotypic negative	White Stereotypic positive
Poor	Musical	Weak	Educated
Bitter	Strong	Greedy	Hopeful
Unemployed	Muscular	Arrogant	Ambitious
Ignorant	Religious	Conventional	Trusting
Suspicious	Athletic	Boring	Patriotic
Inefficient	Colorful	Uptight	Wealthy
Superstitious	Humorous	Gullible	Industrious
Uneducated	Rhythmic	Sheltered	Ethical

Table 2.

Mean reaction times and difference scores for African American and White photos for all conditions following each type of trait prime

<u>Condition</u>	African American photo RT	EA photo RT	Difference Score
Trait Type	Log Mean (<i>SD</i>)	Log Mean (<i>SD</i>)	Log Mean (<i>SD</i>)
Negative Stereotypic African Americans	2.70 (0.09)	2.72 (0.12)	-0.02 (0.08)
Positive Stereotypic African Americans	2.70 (0.09)	2.71 (0.10)	-0.01 (0.08)
Negative Nonstereotypic Whites	2.71(0.09)	2.72 (0.10)	-0.01 (0.08)
Positive Nonstereotypic Whites	2.71 (0.11)	2.70 (0.10)	0.01 (0.07)
Negative Neutral Stereotypic	2.70 (0.10)	2.71 (0.08)	-0.01 (0.06)
Positive Neutral Nonstereotypic	2.71 (0.10)	2.71 (0.11)	0.00 (0.05)

Table 3.

Descriptive Statistics for the PIL-SF and RSS Measures (N = 110)

Scale	Mean	<i>SD</i>	Median	Minimum	Maximum	Range	Cronbach's Alpha
PIL-							.77
SF	23.74	0.26	24	16	28	12	
RSS	30.19	0.51	31	17	38	21	.76

Note. PIL-SF = Purpose in Life Test-Short Form, RSS = Rosenberg Self-esteem Scale, *SD* = Standard deviation.

Table 4.

Bivariate Correlations Among Study Variables (N = 110)

		PIL-SF Scores	RSS Scores
Negative Automatic	Pearson	-.052	.015
stereotyping of	Correlation		
African Americans	Sig. (1-tailed)	.296	.437
PIL-SF Scores	Pearson	1	.462**
	Correlation		
	Sig. (1-tailed)		.000

Note. PIL-SF = Purpose in Life Test-Short Form, RSS = Rosenberg Self-esteem Scale.

** . Correlation is significant at the 0.01 level (1-tailed).

Table 5.

Independent Samples t-tests for Mean Differences of Participants with High and Low Levels of Negative Automatic Stereotyping of African Americans (N = 110)

Variable	<i>t</i>	<i>df</i>	Sig. (2-tailed)	Mean Difference	Std. Error Difference
PIL-SF	3.370	108	.001	1.67	0.50
RSS	1.539	108	.127	1.55	1.00
NAS	-9.117	108	.000	-0.10	0.01

Note. NAS = Negative automatic stereotyping of African Americans, PIL-SF = Purpose in Life Test-Short Form, RSS = Rosenberg Self-esteem Scale. *df* = degrees of freedom. *Std* = Standard.

Table 6.

Bivariate Correlations for Participants with High and Low Negative Automatic Stereotyping (N = 110).

		Higher Negative Automatic Stereotyping			Lower Negative Automatic Stereotyping		
		Negative Automatic stereotyping	PIL-SF	RSS	Negative Automatic stereotyping	PIL-SF	RSS
Negative Automatic stereotyping of African Americans	Pearson Correlation	1	.210	.136	1	.255*	.188
	Sig. (1-tailed)		.062	.162		.030	.084
PIL-SF	Pearson Correlation		1	.419**		1	.461**
	Sig. (1-tailed)			.001			.000

*. Correlation is significant at the 0.05 level (1-tailed).

**. Correlation is significant at the 0.01 level (1-tailed).

Note. $n = 55$ for each group. PCT = Person Categorization Task, PIL-SF = Purpose in Life Test-Short Form, RSS = Rosenberg Self-esteem Scale.

APPENDIX B: FIGURES

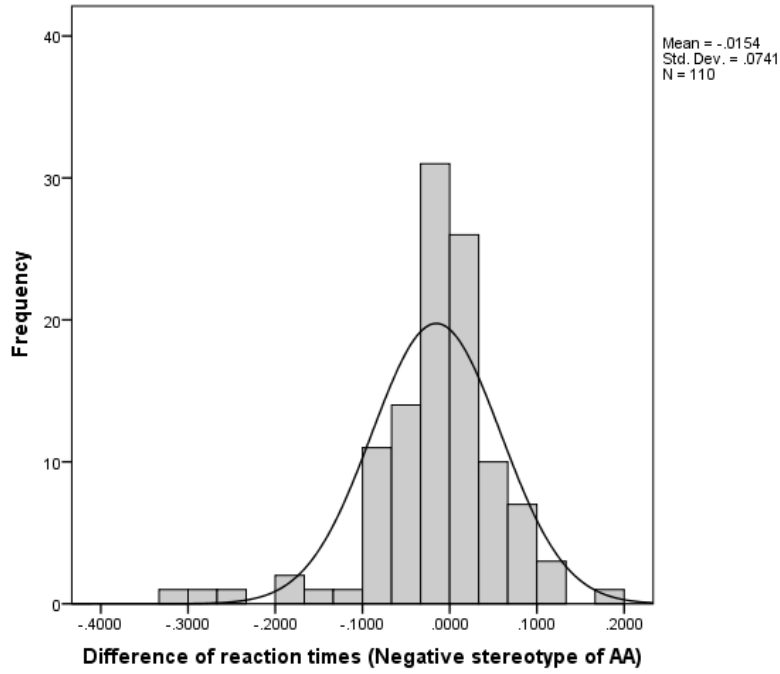


Figure 1. Distribution of the difference of reaction times of negative automatic stereotyping of African Americans.

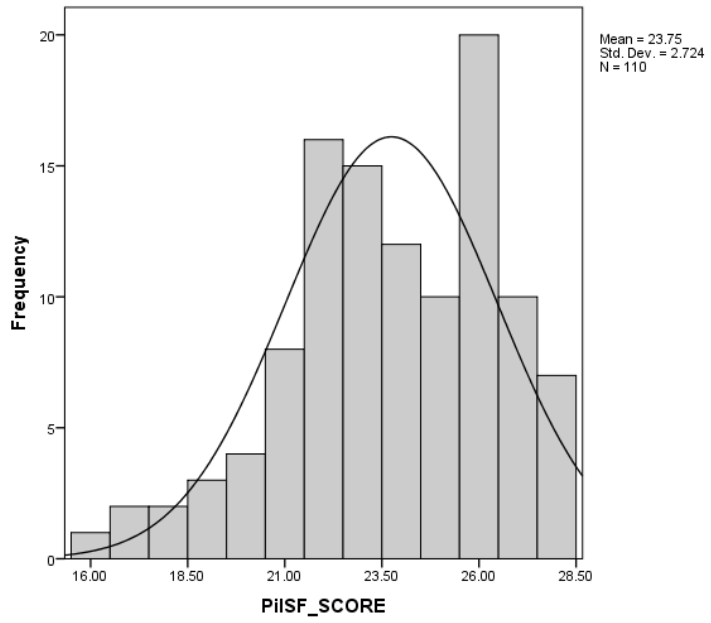


Figure 2. Distribution of total scores for the PIL-SF (PIL-SF = Purpose in Life Test-Short Form)

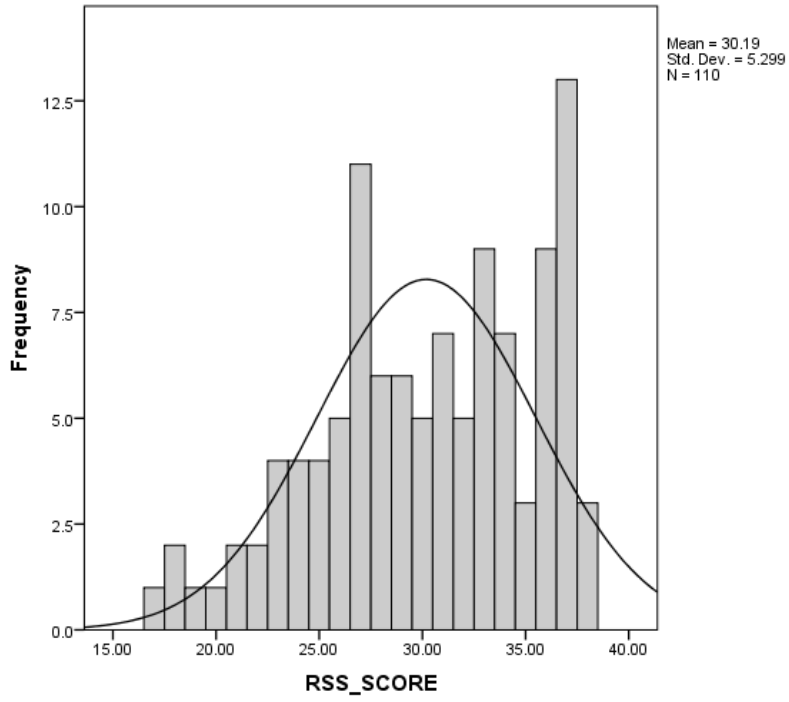


Figure 3. Distribution of total scores for the RSS (RSS = Rosenberg Self-esteem Scale).

APPENDIX C: ADVERTISEMENT

PSPM Advertisement for the 2012-2013 Spring study

Title: Judgments and Perceptions

Researcher: Stewart, Tracie

Participants: 500

Credits: 2.5

Duration: 150 minutes

Description:

The present research examines how we as humans think about individuals and their actions. You may be asked to consider and make judgments concerning potential explanations for a number of behaviors described to you. Other judgments may concern grammatical structures. You may also complete a task in which you will make quick decisions about material presented on the screen. Finally, you will complete questionnaires pertaining to various social issues. The full purpose of the research will be explained in detail upon your completion of the tasks. The studies will last approximately 2.5 hours and you will receive 2.5 hours of experimental credit in your psychology course for your participation. Some participants will complete the experimental tasks in a single 2.5 hour session and others will complete these experimental tasks in two separate sessions: a 2 hour session and a half-hour session one or two days later.

SONA Advertisement for the 2013-2014 Fall study

Title: Judgments and Perceptions

Researcher: Schulenberg, Stefan

Participants: 50

Credits: 1

Duration: 60 minutes

Description:

The present research examines how we as humans think about individuals and their actions. You will be asked to complete a task in which you will make quick decisions about material presented on a computer screen. Finally, you will complete questionnaires pertaining to various social issues, how you feel about yourself, and how you deal with everyday life. The full purpose of the research will be explained in detail upon your completion of the task. The study will last approximately 1 hour and you will receive 1 hour of experimental credit in your psychology course for your participation.

APPENDIX D: INFORMED CONSENT

Consent to Participate in an Experimental Study
Title: Social Judgments and Perceptions
2013-2014 Fall study

Principal Investigator: Dr. Stefan Schulenberg
Associate Professor, Department of Psychology
Director, Clinical-Disaster Research Center
Kinard Hall Suite 203, University of Mississippi

Description

The present research examines how we as humans think about individuals and their actions. You will be asked to complete a task in which you will make quick decisions about material presented on a computer screen. Finally, you will complete questionnaires pertaining to various social issues, how you feel about yourself, and how you deal with everyday life. The full purpose of the research will be explained in detail upon your completion of the task. The study will last approximately 1 hour and you will receive 1 hour of experimental credit in your psychology course for your participation.

Risks and Benefits

There are no anticipated risks associated with participating in this project beyond those normally encountered in daily life. Benefits associated with your participation include increased understanding of the processes involved in the social judgments of others.

Cost and Payments

The experiment will take no more than 1 hour, and you will receive 1 hour of experimental credit in your psychology course for your participation. There are no other costs or payments associated with helping us with this study.

Confidentiality

Your name will be confidentially associated to a code number in order to match your lab data to data collected during general screening. Immediately after the experiment, all identification of your name with the code number will be erased. Your data will be anonymous from that point forward. All data will be stored in a locked laboratory room.

Right to Withdraw

Please understand that your participation is voluntary. Your refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled, and you may choose not to answer specific questions or to discontinue your participation at any time without penalty or loss of benefits.

IRB Approval

This study has been reviewed by The University of Mississippi's Institutional Review Board (IRB). The IRB has determined that this study fulfills the human research subject protections obligations required by state and federal law and University policies. If you have any questions,

concerns, or reports regarding your rights as a participant of research, please contact the IRB at (662) 915-7482.

Statement of Consent

I have read the above information. I have been given a copy of this form. I have had an opportunity to ask questions, and I have received answers. I consent to participate in the study.

Signature of Participant Date

Signature of Investigator Date

NOTE TO PARTICIPANTS: DO NOT SIGN THIS FORM
IF THE IRB APPROVAL STAMP ON THE FIRST PAGE HAS EXPIRED.

APPENDIX E: EXPERIMENTER SCRIPT INSTRUCTIONS

I. Getting Participants Started and Obtaining Consent:

Participants will be waiting in the Peabody Hall Room 101 common area. At the scheduled start time of session, approach participants and introduce yourself, then do the following.

A. Bring participants to the lab and have them seated at the computer station, writing what participant seats in what computer (G1, G2, G3, etc.). Then say:

“Before we get started, I’m going to ask you to do two things. The first is to turn off all cell phones and other electronic devices. The second thing I’m going to ask you to do is read over the informed consent form for this study. You should find two copies located at your computer station - one copy is for you to keep and the other is for you to sign and hand back to me for our records. So, if you would, go ahead and read over the entire form and let me know if you have any questions along the way.”

B. After they have read, (and if they have no questions and appear to have understood the document), participants will be asked to sign the consent form.

C. The experimenter will collect the signed Informed Consents (lock them in the storage cabinet at the end of the session).

Alright, so let’s get started. This study involves a computer task that will take about 20-30 minutes to complete.

In this investigation, we are interested in how people categorize individuals from different social groups. We are interested in your speed of categorizing, but please also be as accurate as possible.

For this task, you should place the index finger of your left hand on the key labeled “B” and the thumb of your left hand on the spacebar. You should place the index finger of your right hand on the key labeled “W” and the thumb of your right hand on the spacebar. (Show them) Further instructions on the computer will guide you through the rest of the experiment.

Do you have any questions?

Press the Y key to begin.

APPENDIX F: PURPOSE IN LIFE TEST SHORT FORM

Purpose in Life test Short-Form PIL-SF (Schulenberg, Schnetzer, & Buchanan, 2011)

(Adapted from the PIL - Crumbaugh & Maholick, 1964, 1969)

For each of the following statements, indicate which statement is most nearly true of you. Note that the scales always extend from one extreme feeling to its opposite kind of feeling. "Neutral" implies no judgment either way; try to use this rating as little as possible.

1. In life I have:

1	2	3	4	5	6	7
no goals or aims at all			neutral			very clear goals and aims

2. My personal existence is:

1	2	3	4	5	6	7
utterly meaningless without purpose			neutral			very purposeful and meaningful

3. In achieving life goals, I have:

1	2	3	4	5	6	7
made no progress whatsoever			neutral			progressed to complete fulfillment

4. I have discovered...

1	2	3	4	5	6	7
no mission or purpose in life			neutral			clear-cut goals and a satisfying life purpose

APPENDIX G: ROSENBERG SELF ESTEEM SCALE

Rosenberg Self-Esteem Scale (RSS) (Rosenberg, 1965)

Below is a list of statements dealing with your general feelings about yourself. Please check the box next to the statement which most closely represents your feelings.

- | | | | | | |
|---|----------------|---|---|--|-------------------|
| 1. On the whole, I am satisfied with myself. | Strongly agree | | | | Strongly disagree |
| | 1 | 2 | 3 | | 4 |
| 2. At times I think I am no good at all. | Strongly agree | | | | Strongly disagree |
| | 1 | 2 | 3 | | 4 |
| 3. I feel that I have a number of good qualities. | Strongly agree | | | | Strongly disagree |
| | 1 | 2 | 3 | | 4 |
| 4. I am able to do things as well as most other people. | Strongly agree | | | | Strongly disagree |
| | 1 | 2 | 3 | | 4 |
| 5. I feel I do not have much to be proud of. | Strongly agree | | | | Strongly disagree |
| | 1 | 2 | 3 | | 4 |
| 6. I certainly feel useless at times. | Strongly agree | | | | Strongly disagree |
| | 1 | 2 | 3 | | 4 |
| 7. I feel that I'm a person of worth, at least on an equal plane with others. | Strongly agree | | | | Strongly disagree |
| | 1 | 2 | 3 | | 4 |
| 8. I wish I could have more respect for myself. | Strongly agree | | | | Strongly disagree |
| | 1 | 2 | 3 | | 4 |
| 9. All in all, I am inclined to feel that I am a failure. | Strongly agree | | | | Strongly disagree |
| | 1 | 2 | 3 | | 4 |
| 10. I take a positive attitude toward myself. | Strongly agree | | | | Strongly disagree |
| | 1 | 2 | 3 | | 4 |

APPENDIX H: DEBRIEFING

Explanation of Experiment: Social Judgments and Perceptions

2012-2013 Spring study

Prior research has established that many of the behaviors you were asked to judge are considered to be stereotypical of African Americans (e.g., Stewart, Doan, Gingrich, & Smith, 1998). Likewise, additional research findings have indicated that individuals can unconsciously hold stereotypic attitudes (e.g., Fazio, Jackson, Dunton, & Williams, 1995). In the present research, we are testing whether individuals who are trained to consider situational explanations for behaviors experience a decrease in the likelihood they will attribute behaviors to the traits of an individual. Additional research suggests conflicting views on the relationship between intergroup bias and perceived meaning in life (Fein & Spencer, 1997; Schimmel et al., 1999). Therefore, another goal of the present research is to test this relationship.

Thus, in the present research you are helping us to learn more about the nature of stereotypes, prejudice, and categorization as well as about what factors are conducive to changing unconscious thought processes. This study is part of a line of studies designed to assess whether negative unconscious thought processes can be modified through intensive training.

In the current experiment, you were randomly assigned to one of four possible conditions. In the first two conditions, participants complete a training program in which they are presented with a behavior and either a situational or a dispositional explanation and are asked to choose the situational explanation over many trials. Immediately following this training, participants complete a task that measures the strength of trait associations called the Person Categorization Task. In the third condition, participants engage in grammatical judgments of the sentences depicting behaviors and complete the categorization task immediately afterwards. Finally, participants in the fourth condition only complete the categorization task. Afterwards, everyone completed questionnaires pertaining to their social beliefs and attitudes. We want to apologize if some of the questionnaire items were offensive. In our goal to look at prejudiced attitudes some of the scales are written in a really blatant way that few people would endorse today. However, for psychometric reasons, we needed to retain them.

If you have any further questions or concerns about your participation in this experiment or would like to read about the results of the present study, feel free to contact the principal investigator, Dr. Tracie Stewart (stewart@olemiss.edu; 662-915-7383) or Seamus Walsh (spwalsh@olemiss.edu), a graduate student working on this project. We hope to have results available in the semester following your participation in this study. If you would like to hear the results of the study, overall, we would be delighted to share the findings with you. But note that we will not have the data for any individual participant, given that no data linking participants to their responses will be retained. For all participants who completed the experiment, your name will be associated with a code number so that your data from the general screening can be combined with data from the lab. After the experiment has ended, we will destroy any

association between your name and the code number so that your data will be anonymous from that point forward.

We have one final favor to ask of you. Because prior knowledge of the study could unintentionally affect the responses of potential participants, we would like to take this opportunity to ask you to please not discuss the study with anyone who has not yet participated in it until the end of the present semester. Feel free to discuss the study with anyone who has participated in it or with the experimenters.

If you would like to learn more about ways to get involved in efforts to combat stereotyping and prejudice, feel free to contact Dr. Stewart or consider consulting the tolerance.org website. Thank you again for your help!

Sincerely,

Tracie L. Stewart, PhD, & Seamus Walsh

Debriefing: 2013-2014 Fall study

Prior research has established that many of the behaviors you were asked to judge are considered to be stereotypical of African Americans (e.g., Stewart, Doan, Gingrich, & Smith, 1998). Likewise, additional research findings have indicated that individuals can unconsciously hold stereotypic attitudes (e.g., Fazio, Jackson, Dunton, & Williams, 1995). In the present research, we are testing whether specific individual differences are associated with fewer levels of automatic stereotyping. Specifically, research suggests conflicting views on the relationship between intergroup bias and perceived meaning in life (Fein & Spencer, 1997; Schimel et al., 1999). Therefore, the goal of the present research is to test this relationship.

Thus, in the present research you are helping us to learn more about the nature of stereotypes, prejudice, and categorization as well as about what factors are conducive to changing unconscious thought processes. This study is part of a line of studies designed to assess whether negative unconscious thought processes can be modified through intensive training.

In the current experiment, you were completing a task called the Person Categorization Task, a measure of automatic activation of stereotypes towards African Americans. Afterwards, everyone completed questionnaires pertaining to their social beliefs and attitudes as well as measures of individual differences related to well-being. We want to apologize if some of the questionnaire items were offensive. In our goal to look at prejudiced attitudes some of the scales

are written in a really blatant way that few people would endorse today. However, for psychometric reasons, we needed to retain them.

If you have any further questions or concerns about your participation in this experiment or would like to read about the results of the present study, feel free to contact the principal investigator, Dr. Stefan Schulenberg (sschulen@olemiss.edu; 662-915-3518) or Andrea Florez (iaflorez@go.olemiss.edu), a graduate student working on this project. We hope to have results available in the semester following your participation in this study. If you would like to hear the results of the study, overall, we would be delighted to share the findings with you. But note that we will not have the data for any individual participant, given that no data linking participants to their responses will be retained. For all participants who completed the experiment, your name will be associated with a code number so that your data from the general screening can be combined with data from the lab. After the experiment has ended, we will destroy any association between your name and the code number so that your data will be anonymous from that point forward.

We have one final favor to ask of you. Because prior knowledge of the study could unintentionally affect the responses of potential participants, we would like to take this opportunity to ask you to please not discuss the study with anyone who has not yet participated in it until the end of the present semester. Feel free to discuss the study with anyone who has participated in it or with the experimenters.

Thank you again for your help!

Sincerely,

Stefan E. Schulenberg, PhD, & I. Andrea Florez, Graduate student

VITA

Ivonne Andrea Flórez, B.A.

Graduate student
Clinical Psychology Department
University of Mississippi

Email: iaflorez@go.olemiss.edu
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EDUCATION

December 2010

B.A in Psychology
Universidad de la Sabana, Bogotá, Colombia

EXPERIENCE

August 2012- July 2013

Graduate research assistant, CDRC, The university of Mississippi

July 2013- July 2014

Graduate Intern at the department of Education and Research, The Baddour center, community with adults with intellectual disabilities. Senatobia, MS.

August 2011 - July 2012

Research and administrative assistant of the prevention center for substance abuse, Fundación Colectivo Aquí y Ahora. Bogota, Colombia.

November 2010 - August 2011

Counselor for an Addiction treatment center for adolescents, Colectivo Aquí y Ahora, Bogota, Colombia.

January 2009 - June 2010

Teacher assistant for Psychometrics class, Universidad de la Sabana, Bogota, Colombia.

January 2010 - June 2010

Teacher assistant for the Clinical Psychology class, Universidad de la Sabana, Bogota, Colombia.

PEER-REVIEWED PUBLICATIONS

Florez, I. A., Schulenberg, S. E., & Stewart, T. L. (in press). Meaning and automatic stereotyping: Advancing an agenda for research. *Logotherapy and Existential Analysis: Annual Proceedings of the Viktor Frankl Institute*.

Schulenberg, S. E., & Florez, I. A. (2013). Advancing logotherapy as a science: A research imperative – Part two. *The International Forum for Logotherapy*, 36, 41-50.

Trujillo, A., & Flórez, I. A. (2013). Alcohol Consumption in Adolescents from Chía and Their Perception of Parental Consumption and Permissiveness with respect to Substance Use. *Revista Colombiana de Psicología*, 22 (1), 21-57.

Flórez, I. A., & Trujillo, A. (2013). ¿Tomar o no Tomar?: Análisis de los motivos de consumo y no consumo del Alcohol en Jóvenes. *Diversitas*, 9 (1), 199-215.

Flórez, I., Martín, E., Yépes, O. (2011). Adolescent internet use: risk behaviors, risk perceptions, and internet problematic use. *TIPICA: Boletín Electrónico de Salud Escolar*, 7(2), 83-93.

Book Chapters:

Florez, I.A., Yopez, O.L., & Martin, E. (2013). The Use of the Internet and Social Well-Being in Adolescents. In O. Yasuhiro., L. P. Rodriguez., & M. C. Peralta-Gomez (Eds.). *Lives and Relationships: Culture in Transitions Between Social Roles*. Charlotte: Information Age Publishing.

Other publications:

Florez, I.A. (2013). A measure of interest to logotherapy researchers: Personal Growth Initiative Scale. *The International Forum for Logotherapy*, 36, 57-58.

Florez, I.A. (2013). A measure of interest to logotherapy researchers: Posttraumatic Growth Inventory. *The International Forum for Logotherapy*, 36, 96-97.

GRANT SUBMISSIONS

Schulenberg, S., & Florez, I. A. (Oct 2013-2014). Predictors of Subjective Well-being Among Victims of the Armed Conflict in Colombia: a Positive View. To: PSYCHOLOGY BEYOND BORDERS MISSION AWARDS

NATIONAL/INTERNATIONAL PRESENTATIONS

Baczowski, B. J., Aiena, B. J., Florez, I. A., Schulenberg, S. E., & Smith, C. V. (2013, November). *Informing disaster-preparedness efforts on a college campus*. Poster presented at the Association for Behavioral and Cognitive Therapies, Nashville, TN.

Florez, I. A., Walsh, S. P., Bowden, M. M., Schulenberg, S. E., & Stewart, T. L. (2013, August). *Examining meaning in life as a predictor of automatic stereotyping*. Poster presented at the annual meeting of the American Psychological Association, Honolulu, HI.¹

Florez, I.A., & Thesis poster, presented at the Symposium on Research in Public Health, organized by the Social Protection Ministry on May 28th, 2010.

¹ The poster received a student poster Recognition Award from APA's Division One, The Society for General Psychology.