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Perceptions of and Implicit Attitudes Toward Women: The Influence of Parental Status, Race, and Label Choice

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PERCEPTIONS OF AND IMPLICIT ATTITUDES TOWARD WOMEN: THE INFLUENCE OF PARENTAL STATUS, RACE, AND LABEL CHOICE

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science at Virginia Commonwealth University

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Abstract

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By Annalucia Bays, B.S.

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Previous research suggests that childfree and childless women are perceived more negatively than mothers. This study investigated attitudes based on parental status, race, and descriptive label. Undergraduate students (N = 386) were randomized to consider targets described as childless, childfree, or mothers/parents. Participants completed a personality characteristic rating scale, the competence and warmth scales of the Stereotype Content Model, an evaluation thermometer, a measure of pronatalism, and a Single Category Implicit Association Test. Childless and childfree women of all races were perceived more negatively than mothers, and women in all parental status groups were ambivalently stereotyped. Implicit attitudes favored parents and childfree targets; however, neither positive nor negative attitudes were demonstrated

toward childless targets. Implicit and explicit attitudes were related yet distinct constructs for childless and childfree targets, but were unrelated for parents. With these findings, this study makes a unique contribution to the literature on childlessness and childfreedom.

Perceptions of and Implicit Attitudes Toward Women: The Influence of Parental Status, Race, and Label Choice

Although the choice to forgo parenting is relatively rare, the number of childfree women has increased in recent decades in Western cultures (Abma & Martinez, 2006; Dye, 2005; Gillespie, 2003; Kohli & Albertini, 2009) with childfreedom being observed in approximately 6.2 to 8.3% of the U.S. population (Abma, Chandra, Mosher, Peterson, & Piccinino, 1997; Martinez, Daniels, & Chandra, 2012). This increase has coincided with societal changes improving the economic, educational, and political opportunities of women (e.g., Lundquist, Budig, & Curtis, 2009). Women choosing to be childfree tend to be highly educated (e.g., Lundquist et al., 2009; Martinez et al., 2012), unmarried (e.g., Abma & Martinez, 2006; Martinez et al., 2012), of high socioeconomic status (e.g., Abma & Martinez, 2006 ; Lundquist et al., 2009), older than parents (e.g., Majumdar, 2004; Martinez et al., 2012), employed in professional jobs (e.g., Abma & Martinez, 2006; Bachu, 1999), and non-religious (e.g., Abma & Martinez, 2006; Rovi, 1994). A wide variety of motivations are reported for the childfree choice, including enjoying the freedoms of the childfree lifestyle (e.g., Gillespie, 2003; Mollen, 2006), environmental concerns (e.g., Mollen, 2006; Park, 2005), and a lack of biological drive to raise children (e.g., Park, 2005).

However, despite growing numbers of women without children, attitudes toward these populations remain unfavorable. Childfree women are consistently perceived more negatively than both parents (e.g., Kemkes, 2008; LaMastro, 2001; Kopper & Smith, 2001) and the

involuntarily childless (Kopper & Smith, 2001; Lampman & Dowling-Guyer, 1995). In some studies, involuntarily childless women are also perceived more negatively than mothers (e.g., Callan, 1985; Kemkes, 2008; Peterson, 1983; Polit, 1987). However, because of their deliberate choice not to mother, negative traits are often attributed to childfree women, including self-centeredness and immaturity (Callan, 1985; Peterson, 1983, Polit, 1978). Childfree women are well-aware of such attitudes and report experiencing a variety of unpleasant social reactions to their nonparental status (Letherby, 2002; Mollen, 2006; Park, 2002). Yet, despite these unfavorable appraisals, childfree women in Western cultures do not appear to suffer any ill-effects from their choice not to mother (DeLyser, 2012; Jeffries & Konnert, 2002; Kohli & Albertini, 2009).

Throughout this document, several important terms are used to describe individuals of varying parental statuses. The terms *childfree/childfreedom*, *involuntarily childless*, and *childlessness/childless* are used to describe specific subsets of individuals who currently are not parents, but who are of childbearing age or older. The term *childless*/*childlessness* describes a general state of not having children (Houseknecht, 1987), and is used when referring either to a trend or to a group of nonparents when the reasons for the status are unknown or mixed. The term *childfree*/*childfreedom* is used to describe an individual who is not currently a parent and has no intention of ever becoming a parent (Houseknecht, 1987; Jacobson & Heaton, 1991; Martinez et al., 2012); this status is the result of a deliberate choice not to parent due to an attitude of never wanting to have children. The term *involuntarily childless* is used to describe an individual who may want children but is not a parent (Houseknecht, 1987; Jacobson, Heaton, & Taylor, 1988; Jeffries & Konnert, 2002); this status may be due to a variety of reasons beyond the individual's control, including (but not limited to) infertility, economic or age limitations, lack of a partner, or the inability to adopt. It is important to note that the distinction between the

terms *involuntarily childless* and *childfree* is significant and stems from an attitudinal position and the degree of control one has over their parental status. Thus, for the purposes of this study, it is assumed that the involuntarily childless would be parents but for some unavoidable and uncontrollable barrier, but the childfree have deliberately chosen their lifestyle due to a lack of desire to parent. The difference between these two terms based on attitude and controllability is conceptualized by Gold (2013):

> Childfree families recognize the pronatal bias of society and say 'not us' while childless families recognize the same bias and respond 'but we cannot.' So, while the implicit bias in favor of childbearing informs both family styles, their responses are decidedly different. (p. 226)

It is also important to note that the term *mother* is broadly defined as any woman who makes an active choice to raise children during her lifetime. Distinctions are not made between women who raise biological children and those become parents through other means. Rather, all women who choose to parent are defined as *mothers*, regardless of the avenue through which they pursued this choice (e.g., surrogacy, adoption, fostering). Thus, differences between the parental status groups in this study are defined in terms of attitudes toward parenting and controllability over parental status.

Dominant social and political ideologies linking motherhood with womanhood, such as the "Motherhood Mandate" (Russo, 1976) and pronatalism (Heitlinger, 1991), are often offered as explanations for negative attitudes toward women who violate parenting norms. Additionally, the literature on stigma is valuable in contextualizing negative attitudes toward women without children. Goffman (1963) was among the first to define stigma as a relational process in which a negative attribute violates social norms and is subsequently linked with a stereotype, resulting in a spoiled identity and loss of social status. Goffman (1963) further defined three types of stigma (*abominations of the body*, *tribal stigma*, and *blemishes of individual character*) and two types of stigmatized individuals (*discredited* and *discreditable*). However, following Goffman's work,

many other authors have proposed a variety of ways to conceptualize stigma. For example, Link and Phelan (2001) posited a four-component stigmatization process in which power differentials link category labels to stereotypes, leading to social separation, status loss, and ultimately discrimination. Jones, Farina, Hastorf, Markus, Miller, and Scott (1984) further expounded on Goffman's relational emphasis by stating that stigmatization is not inherent to negative traits themselves, but occurs because of the social meaning attached to such traits and their associated behaviors. Thus, although definitions of stigma vary slightly in their focus, they each provide a unique way of conceptualizing negative attitudes toward women without children.

Other theories additionally inform the study of women without children. For example, Terror Management Theory (TMT; Greenberg, Pyszczynski, & Solomon, 1986) suggests that those who eschew common defenses against existential anxiety threaten the self-esteem and cultural worldviews of others, and are subsequently stereotyped and stigmatized (Greenberg et al., 1986; Greenberg, 2012; Greenberg & Kosloff, 2008; Jackson, 2011). Indeed, research suggests that producing offspring is one important method of defending against existential anxiety, adhering to cultural worldviews, and maintaining self-esteem (Fritsche et al., 2007; Wisman & Goldenberg, 2005; Zhou, Lei, Marley, & Chen, 2009; Zhou, Liu, Chen, & Yu, 2008). Thus, women who do not have children may receive negative reactions because they increase the existential anxiety of others.

Examining the content of stereotypes is also a useful way to study perceptions of women with varying parental statuses. According to the cross-culturally validated (Cuddy et al., 2009) Stereotype Content Model (SCM; Fiske et al., 2002), evaluations of others are made along the universal dimensions of warmth and competence, which correspond to perceptions of status and competition among groups. In this model, unambivalent and ambivalent stereotyping produces groups perceived as high warmth-high competence (HW-HC), low warmth-low competence

(LW-LC), high warmth-low competence (HW-LC), and low warmth-high competence (LW-HC). These four groups are further differentiated by the varying emotional reactions of admiration (HW-HC), contempt (LW-LC), pity (HW-LC), and envy (LW-HC). Moreover, the behaviors from intergroup affect and stereotypes (BIAS) map (Cuddy et al., 2007) suggests that differential patterns of stereotyping and emotional response produce distinct behavioral tendencies in which some groups elicit active over passive behaviors, and facilitative over harmful behaviors. By integrating the cognitive, affective, and behavioral components of stereotype content, the SCM and BIAS map provide a comprehensive framework for conceptualizing stereotypes of women with varying parental statuses.

The concept of intersectionality (Crenshaw, 1989) also provides a useful approach for studying the experiences of women with and without children. Originating with feminist theory, intersectionality purports that female identity is comprised of a crossroads of intersecting identities that mutually influence the experiences of women (Crenshaw, 1989; Sawyer, Salter, & Thoroughgood, 2013). Because these identities are intertwined and may interact in ways that compound inequality, they cannot be considered in isolation (Cole, 2009; Davis, 2008; Samuels & Ross-Sheriff, 2008; Sawyer et al., 2013; Warner, 2008; Warner & Shields, 2013). Despite the pervasiveness of intersectionality across multiple disciplines, most previous research has treated women without children as a racially homogenous group. However, the concept of intersectionality implies that identities based on parental status and race may interact to produce differential perceptions of women. Nonetheless, only two studies to date have examined perceptions of childfree and/or involuntarily childless women as they vary by race (Koropeckyj-Cox et al., 2007; Vinson, Mollen, & Smith, 2010). Not only have these two studies produced contradictory findings, but they have also studied only Black-White differences in perceptions of

women without children, ignoring the experiences of women in other racial minority groups (e.g., Asian and Hispanic).

Individuals who do not parent are referred to by a wide variety of terms, all of which imply that the individual does not have children. However, research in a number of areas has established that the label chosen to describe a social group can influence the perceptions of others (e.g., Heilman, 1975; Millington & Leierer, 1996; Penn & Nowlin-Drummond, 2001; Vartanian, 2010; Zilber & Niven, 1995). Indeed, a lively debate rages in online communities over which labels are most appropriate when referring to individuals without children. This debate has most often focused on two particular terms: "childless" and "childfree." Though these two words are semantically similar, numerous comments in online articles, blogs, and threads assert that these terms carry vastly different connotative meanings in social contexts (Bordeaux, 2012; coolchildfreeguy, 2012; Kathryn, 2010; Smith, 2009; Smith, 2012). According to these comments, even when the reason for nonparental status is absent, these two terms provide ample information regarding the reproductive choices (or lack thereof) of the individuals who embrace them. Some researchers have begun to acknowledge the important conceptual distinction between the terms "childless" and "childfree" (Gillespie, 2003; Gold, 2013; Letherby, 2002). However, no study to date has established empirically that these two terms are perceived differently. If the terms "childless" and "childfree" do indeed carry very different social connotations, an experimental manipulation of these terms should produce varying perceptions and stereotypes of women without children, even in the absence of reasons for not parenting.

Explicit attitudes are those that individuals are aware of, that they can identify and control, and that use cognitive energy and effort (Dasgupta, 2010; Nosek, 2007). Implicit attitudes, on the other hand, are those that occur automatically and outside of conscious awareness (Greenwald & Banaji, 1995). The study of implicit attitudes has become a productive

area of research, with a variety of measures being developed to assess implicit attitudes. The relation between implicit and explicit attitudes is often complex, with stronger correlations being observed for attitudes toward neutral targets (Fazio & Olsen, 2003; Greenwald, Nosek, & Banaji, 2003) and weaker correlations being observed for attitudes toward sensitive social topics (Cameron, Brown-Iannuzzi, & Payne, 2012; Cunningham, Preacher, & Banaji, , 2001; Greenwald, Poehlman, Uhlmann, & Banaji, 2009; Schnabel et al., 2008). Many other variables also moderate implicit-explicit relations (Hofmann, Gschwendner, Nosek, & Schmitt, , 2005b), including the spontaneity of self-reporting (Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005a), implicit-explicit conceptual correspondence (Cameron et al., 2012; Gawronski, LeBel, & Peters, 2007; Greenwald et al., 2009; Schnabel, Asendorpf, & Greenwald, , 2008), and the opportunity and motivation to control responses (Fazio & Olsen, 2003; Nosek, Hawkins, Frazier, 2011). Implicit and explicit attitudes differentially influence behavior (Greenwald et al., 2009; Hofmann et al., 2005b), with some research suggesting that implicit attitudes strongly predict behavior (Cameron et al., 2012), and other research suggesting that implicit attitudes are weakly predictive (Oswald, Mitchell, Blanton, Jaccard, & Tetlock, 2013). Nonetheless, implicit attitudes are relevant to the study of childlessness, as such attitudes may influence social perceptions of childfree and involuntarily childless individuals automatically and outside of conscious awareness. However, no study to date has assessed implicit attitudes and implicit-explicit attitude relations based on parental status.

Using an analogue research design, the current study sought to replicate previous research reporting negative perceptions of women without children. It was hypothesized that childfree women would continue to be rated more negatively than women with children and involuntarily childless women. Additionally, the current study attempted to clarify the influence of parental status and race on perceptions of women. It was further hypothesized that an

interaction would occur between race and parental status, with childfree and involuntarily childless women of racial/ethnic minority groups being rated more negatively than childfree and involuntarily childless Caucasian/White women. Using a measure of the SCM, the current study also assessed stereotype content based on parental status, and hypothesized that evaluations of warmth and competence will vary for mothers, involuntarily childless women, and childfree women. Furthermore, this study examined perceptions of women without children as a function of the label chosen to describe them. It was hypothesized that women described as "childfree" would be rated more negatively than women described as "childless." The current study also explored implicit attitudes based on parental status, in which participants were hypothesized to demonstrate implicit preferences for parents over involuntarily childless and childfree individuals, and involuntarily childless over childfree individuals. Finally, the current study assessed implicit-explicit attitude relations, in which significant and positive correlations were hypothesized between implicit and explicit attitudes toward parents, involuntarily childless individuals, and childfree individuals.

Literature Review

Because the number of women choosing to be childfree is slowly increasing in the U.S., perceptions of and attitudes toward women without children is a relevant area of research. This chapter will review trends in and associated characteristics of choosing to remain childfree, and the motivations and well-being of childfree women. This chapter will also review attitudes toward childlessness and potential theoretical explanations for such attitudes. Additionally, previous research on the influence of race and label choice on perceptions of women will be presented. Unless otherwise specified, the empirical research reviewed on childlessness and childfreedom focuses on attitudes toward and experiences of individuals in Western cultures (e.g., North America, Europe). Finally, literature on implicit attitudes will be reviewed, along with their potential relevance to perceptions of individuals without children.

Trends in Childlessness

Childlessness, or the state of not having children, is an increasing phenomenon in Western cultures (Abma & Martinez, 2006; Dye, 2005; Gillespie, 2003; Kohli & Albertini, 2009; Martinez et al., 2012). Voluntary childlessness, otherwise known as being childfree, is defined as "…having no children and not expecting to have any" (Jacobson & Heaton, 1991, p. 80). Martinez et al. (2012) further defined the childfree as "…those who expect to have no children in their lifetimes, and are either fecund (physically able to have a birth) or are surgically sterile for *contraceptive* reasons" (p.4).

According to recent research, the incidence of U.S. childlessness is increasing and may have doubled in the last three decades (Dye, 2005; Dye, 2008). For example, Rovi (1994) found that the percentage of childless women in the U.S. increased from 2.6% in 1972 to 6.4% in 1988. Dye (2008) reports that 20% of women aged 40 to 44 were childless in 2006. Additionally, data from the National Survey of Family Growth (NSFG) indicated that approximately 6% of U.S. women aged 15-44 were childfree from 2006 to 2010, a figure that has remained stable since 2002 (Martinez et al., 2012). Moreover, although the choice to remain childfree is still relatively rare (Jacobson & Heaton, 1991; Lundquist et al., 2009; Park, 2002; Park, 2005) it is an increasing trend, especially in affluent Western societies (Bachu, 1999; Boyd, 1989; Gillespie, 2003; Kohli & Albertini, 2009). Though specific statistics vary widely, nearly all show an increase in rates of U.S. childfreedom over the last several decades. According to Abma et al. (1997), the rate of permanent childfreedom in U.S. women increased from 4.9% in 1982 to approximately 6.2% in 1995. Additional estimates by Abma and Martinez (2006) show an increase in childfreedom from 5% in 1982 to 7% in 2002 in women aged 35 to 44. Furthermore, in that study, of the women aged 35 to 44 in 2002 who were childless, the childfree constituted 42% of this population. Data from the NSFG also confirm that approximately 8.3% of childless women aged 15-44 did not anticipate giving birth to a child in their lifetime (Martinez et al., 2012).

The upsurge in childlessness in many Western cultures is due to a number of factors, including the decision to delay or forgo marriage, greater rates of divorce, increased accessibility of birth control and abortion, and delay of first childbirth in marriage (Kohli & Albertini, 2009; Lundquist et al., 2009). Indeed, this increase has paralleled the social, political, and financial gains of women's liberation (Jacobson et al., 1988; Lundquist et al., 2009). In fact, educational achievement is a strong predictor of childfreedom for women (Abma & Martinez, 2006; Bachu,

1999; Jacobson et al., 1988; Jacobson & Heaton, 1991; Lundquist et al., 2009). Additionally, the opportunity for greater female participation in the labor force has contributed to this trend in multiple countries (Gubernskaya, 2010). Therefore, a greater commitment to career (Abma & Martinez, 2006; Jacobson & Heaton, 1991), higher income (Abma & Martinez, 2006), and professional status are positively associated with childfreedom in women (Abma & Martinez, 2006; Bachu, 1999; Jacobson & Heaton, 1991).

Early studies of the correlates of childlessness failed to distinguish between women who were involuntarily childless and those who were childfree. However, more recent research has begun to acknowledge this distinction, revealing that childfree women share a demographic profile that is distinct from involuntarily childless women and temporarily childless women. The childfree tend to be highly educated (e.g., Lundquist et al., 2009; Majumdar, 2004; Martinez et al., 2012), committed to achieving personal and career goals (e.g., Majumdar, 2004), employed full-time in professional/managerial jobs (e.g., Abma & Martinez, 2006) and have high income (e.g., Abma & Martinez, 2006 ; Lundquist et al., 2009; Majumdar, 2004). In addition, childfree women are more likely to be unmarried (e.g., Abma & Martinez, 2006; Martinez et al., 2012) and older than parents (e.g., Majumdar, 2004; Martinez et al., 2012). Childfree women also tend to be non-religious (e.g., Abma & Martinez, 2006), rarely or never attend church services (e.g., Abma & Martinez, 2006), and disagree with traditional biblical beliefs (Heaton et al., 1992). Moreover, the childfree report being less traditional (Majumdar, 2004), and placing less value on conventional family norms and cross-generational support systems (Jacobson & Heaton, 1991). According to the few studies assessing gender differences, males and females are equally likely to be childfree (Heaton et al., 1999; Jacobson & Heaton, 1991).

Motivations for Childfreedom

A variety of motivations for not parenting are reported by the childfree in Western cultures. Indeed, studies suggest that women who voluntarily choose not to parent do so with much thought and careful reflection (DeLyser, 2012; Letherby, 2002). For example, some women enjoy the freedoms of the childfree lifestyle (Gillespie, 2003; Houseknecht, 1987; Mollen, 2006; Movius, 1976). These freedoms may include the ability to travel, develop hobbies, volunteer, and pursue rewarding careers (Gillespie, 2003; Houseknecht, 1987; Movius, 1976; Mollen, 2006; Park, 2005). Many also report that choosing not to have children allows them to invest more fully in their intimate relationship with a partner (Gillespie, 2003; Houseknecht, 1987; Mollen, 2006). Still others report that they are not willing or able to make the financial sacrifices required to raise a family (Mollen, 2006; Movius, 1976, Park, 2005). Furthermore, many childfree women believe they possess personality characteristics that are incompatible with parenting, such as introversion, anxiety, inflexibility, and impatience (Park, 2005). Others report a lack of interest in, comfort with, and maternal instinct for children (Houseknecht, 1987; Park, 2005). Additionally, some childfree women cite environmental consciousness, such as stemming population growth, among the primary reasons for not parenting (Houseknecht, 1987; Mollen, 2006; Movius, 1976; Park, 2005). Others report having poor parenting models as children (Houseknecht, 1987; Mollen, 2006; Park, 2005), hearing stories of negative parenting experiences from others (Park, 2005), and aversive childcare experiences of their own (Mollen, 2006). Others are simply trying to avoid the possibility of passing hereditary diseases or genetic deficiencies to the next generation (Mollen, 2006). Furthermore, some childfree women are concerned that the current state of the world makes it an inappropriate place in which to raise children (Houseknecht, 1987; Mollen, 2006). However, a more radical rejection of motherhood is also emerging as a motivation for remaining childfree

(Gillespie, 2003). Mollen (2006) reports that early resistance to traditional gender roles and identities played a primary role in many of her female participants' reasons for choosing to be childfree. Additionally, according to several authors (Gillespie, 2003; Park, 2005), participants reported that the sacrifices, burdens, and responsibilities associated with motherhood were not appealing or perceived as fulfilling, and would entail losses of time, energy, and personal identity that were simply not acceptable.

Well-Being of Childfree Women

Research has also demonstrated that the well-being of childfree women does not suffer as a result of their nonparental status and, in most instances, is equal to that of mothers (Callan, 1987; Connidis & McMullin, 1993; Jeffries & Konnert, 2002; Mueller & Yoder, 1999; Somers, 1993). For example, studies suggest that childfree women are as satisfied with their family size as mothers (DeLyser, 2012; Mueller & Yoder, 1999) and experience little regret in later life regarding their choice not to parent (DeLyser, 2012; Jeffries & Konnert, 2002). Connidis and McMullin (1993) found that mothers and childfree women showed statistically identical levels of both happiness and depression. Callan (1987) also reported that childfree women demonstrated as much life satisfaction, self-satisfaction, positive affect, and marital satisfaction as mothers. Additionally, childfree women report equal levels of self-reported autonomy, personal growth and mastery, positive relationships, and self-acceptance when compared to mothers (Jeffries & Konnert, 2002). Moreover, far from being isolated in old age, childfree people in Western cultures have a tendency to give charitably (both in time and money) to non-familial others, participate actively in their communities, and develop wide social networks (Kohli & Albertini, 2009). In fact, at least one study found that childfree women may demonstrate *higher* well-being than mothers in specific domains (Callan, 1987). For instance, mothers in Callan's (1987) study reported significantly less satisfaction with their levels of freedom and responsibility than

childfree women. These mothers also reported less cohesion, affectionate expression, and consensus in their marital relationships than childfree women.

Attitudes Toward Childlessness

Some studies suggest that, as delayed parenthood is becoming more normative, childfreedom is becoming more acceptable in Western cultures (Gubernskaya, 2010; Koropeckyj-Cox et al., 2007). Indeed, correlates predicting acceptance of the childfree choice parallel many of the correlates of actual childlessness. In general, positive attitudes are found in the young, the less traditional, the highly educated, the less religious, and those with higher incomes (Gubernskaya, 2010; Koropeckyj-Cox & Pendell, 2007a; Koropeckyj-Cox & Pendell, 2007b; Merz & Liefbroer, 2012). For example, research in the Netherlands, a relatively progressive country, reports an increase in acceptance from 20% to 90% in the last three decades (Noordhuizen, de Graaf, & Sieben, 2010). This trend is partially attributed to attitude change *within* cohorts and individual-level variables, rather than cohort replacement (Gubernskaya, 2010; Noordhuizen et al., 2010), though, overall, supportive attitudes tend to increase as age decreases (Gubernskaya, 2010). In addition, positive attitudes toward the childfree are more often observed in women than in men (Gubernskaya, 2010; Koropeckyj-Cox & Pendell, 2007a; Koropeckyj-Cox & Pendell, 2007b; Merz & Liefbroer, 2012; Pearce, 2002), and, not unexpectedly, those who plan to remain childfree themselves (Koropeckyj-Cox & Pendell, 2007a; Koropeckyj-Cox & Pendell, 2007b). An analysis of changing attitudes toward childlessness from 1988 to 2002 in six different countries (Great Britain, Ireland, the U.S., Austria, Germany, and the Netherlands) confirms these correlates (Gubernskaya, 2010).

In fact, previous research has demonstrated that attitudes toward pregnancy and parenting may be decidedly negative in young adult populations in the U.S. (Frost, Lindberg, & Finer, 2012; Miller, 2011; Vasilenko, Lefkowitz, & Maggs, 2012). For example, in a study assessing

college students' perceived consequences of sexual activity, participants identified "worry about pregnancy" as the most commonly experienced negative intrapersonal consequence (Vasilenko et al., 2012). Another study reported that the majority of sexually active college students are concerned about pregnancy (Miller, 2011), with other research confirming that the majority of young adults are highly committed to avoiding pregnancy (Frost, Lindberg, & Finer, 2012). Moreover, the majority of college student participants in one study who did not already have children planned to delay parenting until their late 20s (Peterson et al., 2012).

However, despite the growing popularity of this choice, attitudes toward childfreedom still vary considerably (Merz & Liefbroer, 2012) with negative attitudes being predicted by a number of variables. In Western cultures, those who view childfreedom unfavorably tend to be older, married, less educated, of lower socioeconomic status, attend church regularly, and have children of their own (Gubernskaya, 2010; Noordhuizen et al., 2010). Those who report conservative religious beliefs are also more likely to report negative evaluations of the childfree (Koropeckyj-Cox & Pendell, 2007a). In addition, at least one study suggests that women may be *more* likely than men to report negative attitudes toward the childfree choice (Kemkes, 2008). Although the current study assesses attitudes toward nonparental status in the U.S., cross-cultural studies, such as those described above, are nonetheless informative when considering trends in and predictors of attitudes toward childfree and involuntarily childless populations.

A number of qualitative and quantitative studies using Western samples have assessed attitudes toward childfree and involuntarily childless women. Specifically, experimental research has documented that evaluations of childfree women tend to be unfavorable and attitudes toward childlessness are generally negative (e.g., Kemkes, 2008; Kopper & Smith, 2001; LaMastro, 2001; Lampman & Dowling-Guyer, 1995; Mueller & Yoder, 1997). Furthermore, qualitative research directly studying the childfree indicates that these women are

aware of and experience these negative reactions (Gillespie, 2000; Houseknecht, 1977; Letherby, 2002; Mollen, 2006; Park, 2002; Picard, 1997).

Experimental studies. Since the mid-twentieth century, several empirical studies using Western samples have examined attitudes toward childfree women and documented a number of findings. Chief among these findings is that the childfree are perceived more negatively than parents (e.g., Callan, 1983; Ganong, Coleman, & Mapes, 1990; Jamison et al., 1980; Kopper & Smith, 2001; LaMastro, 2001; Lampman & Dowling-Guyer, 1995). Specifically, childfree women have been rated as less socially desirable, wholesome, well-adjusted, cheerful, and nurturing than women of all other family sizes (Polit, 1978). Callan (1985) reported that the childfree were viewed as more individualistic, financially secure, focused on career, self-centered, and materialistic than parents. They were also considered to be less limited and conforming, but also less caring, devoted, likable, emotionally mature, natural, and fond of children. Studies also show that the childfree are thought to be more autonomous, independent, rebellious, nonconforming, in need of social support, socially distant, immature, and selfish than parents (Polit, 1978). A further study by Kemkes (2008) found that participants responded negatively to childless women, rating them as less committed to family, having inferior parenting skills, less faithful, honest, mature, attractive, and generous, but more ambitious than women with children. Other work has shown that childfree women are anticipated to dislike children, have inferior parenting ability, have less satisfying lives, be less happy at age 65, and be less likely to lead rewarding lives in the next decade than mothers (Mueller & Yoder, 1997). In Peterson's (1983) study, when explaining childlessness in single men and women, participants wrote stories with themes of emotional incapability, selfishness, social rejection, negative childhood experiences, and the need for mental health services. Moreover, the childless individual was viewed as misguided, likely to change his/her mind in the future, or delighted in

motherhood following an accidental pregnancy. Finally, a meta-analysis conducted by Ganong et al. (1990) confirmed the finding that family structure plays a role in stereotyping. Although this assessment of six studies did not calculate effect sizes based on target gender, parents were perceived considerably more positively than childfree individuals. The implications of these findings suggest that differential treatment due to "…parental status is potentially among the most subtle forms of discrimination that a person may experience" (Ganong et al., 1990, p. 288).

Studies also suggest that childfree women are perceived less favorably than involuntarily childless women (Polit, 1978). For instance, participants in Kopper and Smith's (2001) study had the most negative emotional responses and attributed the highest degree of responsibility to childfree couples. By contrast, participants responded with positive reactions and sympathy toward infertile couples. An additional study by Lampman and Dowling-Guyer (1995) found that childfree women were perceived as considerably less driven and caring than involuntarily childless women. Moreover, involuntarily childless couples were perceived as having greater relationship quality than the childfree. In fact, one's degree of control over fertility choices may have the largest impact on how negatively one is perceived, with deliberate choice being a strong predictor of negative perceptions of childfree women (Calhoun & Selby, 1980).

Qualitative studies. Qualitative research also suggests that childfree women are well-aware of the negative sanctions against childfreedom. For example, Mueller and Yoder (1999) found that childfree women perceived dissatisfaction with their family size and pressure to change it from friends and family. This pressure to have a child included inappropriate queries into the reason for their choice and unwanted reproductive advice from healthcare professionals. Furthermore, the majority reported that they were negatively stereotyped by others, and that attributions of selfishness, career-orientation, materialism, dislike of children, and non-

nurturance were most often made. Additionally, childfree women in Somers' (1993) study reported that they were negatively stereotyped by family members.

Additionally, childfree participants in Park's (2002) study reported that others label them as self-centered, unfriendly, egotistical, and strange. Other research suggests that women without children feel misunderstood, especially when others cite their lack of access to and understanding of children as reasons for their childlessness (Letherby, 2002). Childfree women have also described social reactions of criticism, pity, shock, and dismay (Mollen, 2006). Indirect, but repeated questioning about reproductive intentions is common, along with reactions of astonishment and alarm (Mollen, 2006). Some childfree women have even reported having their sanity questioned by strangers and acquaintances (Mollen, 2006). Others are subjected to workplace discrimination, including the expectation to work longer hours and less desirable shifts, and to forgo holidays and weekends (Mollen, 2006; Picard, 1997). Furthermore, many childfree women report having been denied sterilization by doctors who insist they will change their minds (Gillespie, 2000; Mollen, 2006; Mueller & Yoder, 1999).

Gillespie (2000) reports that childfree women experience several types of negative social reactions. One type of reaction is blatant *disbelief* in which other explanations, such as infertility and ambition, are imposed on childfree women as more acceptable explanations of their nonparental status. Another common reaction is deliberate *disregard* in which people simply dismiss their decisions as impermanent, irrational choices that are likely to change under the right circumstances, or be regrettable in the future. A final type of social reaction is *deviance* in which childfree women are treated as abnormal and dangerous. However, while many childfree women are cognizant of these negative evaluations, Houseknecht (1977) suggests they report little overall concern. Though social support is less common, childfree women do experience some reference group support for their decision (Houseknecht, 1977). Still, Polit (1978) suggests

that negative perceptions of the childless are so pervasive that "…people may avoid remaining childless…because they don't want to be thought of by others as possessing undesirable personality traits…" (p. 105).

It is important to note that negative reactions toward women without children cannot be isolated from their larger social and political context. Feminist scholars have suggested that female identity is essentially juxtaposed against male identity (de Beauvoir, 1971). According to Ruddick (1989), "No other division – of class, race, religion, or culture – has been as ineradicable as that between the sex that can bear children and the sex that cannot" (p. 191). It is suggested that the lives of women are structurally and experientially different from those of males, and these differences are situated around the reproductive abilities and experiences of the sexes (Hartsock, 1983). Although both men and women play essential roles in procreation, women share a temporally continuous and material relationship with reproduction through the pregnancy and childbirth, making maternity undeniable. Men, on the other hand, experience an abstracted discontinuity with reproduction due to their inability to become pregnant and give birth. That paternity can be questioned allows parenting to be a "choice" for men, whereas unquestionable maternity is inherently "natural" and "obligatory" for women (O'Brien, 1981).

According to Hartsock (1983), "Men's power to structure social relations in their own image means that women too must participate in social relations which manifest and express abstract masculinity" (p. 302). Because men are the dominant gender, they have historically had the power to define social roles for women that have centered on women's productive and reproductive abilities, both in the workforce and the family. Women's physical tie to offspring through pregnancy was the impetus for a sexual division of labor, resulting in a gender hierarchy, systematic differences between men and women's work, and disparate realities for men and women (Hartsock, 1983). Although both men and women produce in the workforce, production

in the home and family is "women's work", which has been historically devalued and underappreciated. de Beauvoir (1971) suggested that power relations between the sexes allow men to pursue subjectivity and "transcendence," (i.e., creative, independent, dynamic, industrious, and outward pursuits). Women, on the other hand, have been relegated by men to "object" or "Other" whose domain is "immanence" (i.e., passive, repetitive, and inward pursuits). Similarly, the realm of the mind and reason has been attributed to men, whereas the realm of physicality, affection, and passion has been attributed to women (Ruddick, 1989).

Yet, de Beauvoir (1971) insists that inequalities between the genders cannot be understood solely in perceived biological and psychological differences between men and women. According to de Beauvoir (1971), male and female identities are socialized and constructed, not innate. Thus, the study of women without children also cannot be understood without a discussion of motherhood as a socially constructed female identity, and the social and political meanings attached to motherhood (Phoenix & Woollett, 1991). Feminist discourses have framed motherhood as a privileged social status, a politicized gender role, a position of empowerment, and an oppressed social condition (Reger, 2001). Other feminist authors have noted that maternal work and thought is defined by protecting children, fostering their growth, and training them to think and behave in socially acceptable ways (Ruddick, 1989). Although such maternal work is not innately feminine, and can be undertaken by both sexes equally, Ruddick (1989) posits that "…the practices and cultural representations of mothering are strongly affected by, and often taken to epitomize, prevailing norms of femininity" (p. 41). Other authors have suggested that women are socialized to care for others and that, by extension, motherhood creates an imperative for women to provide care to all individuals in society (Reger, 2001). In this context, womanhood and motherhood are seen as privileged statuses with the responsibility of caring not just for one's family and children, but for everyone. Indeed, Ruddick

(1989) suggests that "female thinking" fundamentally equates with "maternal thinking" and even women who choose not to mother are nonetheless expected to participate in maternal work (Ruddick, 1989). Thus, female identity has been constructed around providing concrete and physical care to others. According to Hartsock (1983), "Motherhood in the large sense, i.e., motherhood as an institution rather than experience, including pregnancy and the preparation for motherhood almost all female children receive as socialization, results in the construction of female existence as centered with a complex relational nexus" (p. 294). With such meaning attached to motherhood and maternal work, it is no wonder that women who do not participate in motherhood are perceived negatively.

This idea is also exemplified by Russo's (1976) concept, the "Motherhood Mandate," which highlights the centrality of motherhood to womanhood. According to Russo (1976), the societal directive for women to reproduce is so prominent that it is essentially "mandatory" (p. 145). Indeed, it is a commonly held belief that all women possess a biological drive to reproduce (Movius, 1976). Moreover, this genetic predisposition is thought to endow women with love for their child and knowledge of how to care for it (Movius, 1976). The gender-role socialization process that results from these beliefs remains an influential force, especially in those cultures that highly prize motherhood (Russo, 1976). Current literature confirms the continued existence of this imperative, albeit in more indirect and sophisticated ways (Gillespie, 2000; Park, 2002). Dominant views produce discourses of disbelief, disregard, and deviance for women who choose not to mother (Gillespie, 2000). These discourses subtly communicate that the most acceptable role for women is that of devoted mother whose education and career are secondary to the care of her family (Movius, 1976). Furthermore, such discourses reinforce the concept that motherhood is an essential role in protecting the traditional values associated with the nuclear

family (Gillespie, 2000). Consequently, childfree women are often perceived as "other" (p. 10) for violating primary gender roles (Letherby, 2002).

In attempting to explain the persistence of negative attitudes toward childfree women, some studies suggest that it is positive attitudes toward *delayed* parenting, not permanent childlessness, that are becoming more normative (Koropeckyj-Cox et al., 2007). Indeed, Jacobson and Heaton (1991) reported that only 2.8% of females and 3.5% of males in their study plan to be childfree. Peterson et al. (2012) further report that college-aged participants are unlikely to choose childfreedom in the face of infertility, reporting that they would instead pursue fertility treatments or adoption. According to these authors and others (Park, 2005), because most individuals plan to parent, pronatalism remains a pervasive component of American culture. Heitlinger (1991) provides the following conceptualization of pronatalism:

> Although pronatalism is hard to define in an absolute and unequivocal way, it is safe to suggest that it implies encouragement of all births as conducive to individual, family and social well-being (De Sandre, 1978, p. 145). Pronatalism can then be seen as operating on several levels: culturally, when childbearing and motherhood are perceived as 'natural' and central to a woman's identity; ideologically, when the motherhood mandate becomes a patriotic, ethnic or eugenic obligation; psychologically, when childbearing is identified with the micro level of personal aspirations, emotions and rational (or irrational) decision-making (by women or couples); on the cohort level, when changes in the birth rate are related to the size of successive generations; and on the level of population policy, when the state intervenes, directly or indirectly, in an attempt to regulate the dynamics of fertility and to influence its causes and consequences. (p. 344)

According to several authors, even greater access to effective birth control and workplace opportunities has not alleviated the pronatalist pressures on women to reproduce (Park 2002, Russo, 1976). Pathologization of women who reject motherhood is situated in a socially and politically constructed imperative fundamentally entwining motherhood with feminine identity. This is reinforced by a historically and socially gendered labor division, reproduced in hierarchical political and social structures, and reflected in cultural ideology. The study of childfree women cannot be isolated from this larger context.

It is also important to note that the current study's focus on women without children is not intended to ignore the experiences of men without children. Although far fewer studies have assessed social perceptions of childfree men, those that have confirm that childfree men are perceived more negatively than fathers (Callan, 1985; Calhoun & Selby, 1980; Jamison, Franzini, & Kaplan, 1980; Kemkes, 2008; LaMastro, 2001; Lampman & Dowling-Guyer, 1995). Furthermore, childfree men are aware of these perceptions (Somers, 1993). Some studies report that childfree men are also perceived more negatively than involuntarily childless men (Callan, 1985; Kopper & Smith, 2001; Lampman & Dowling-Guyer, 1995), although several others report no difference in perceptions of men based on reason (voluntary vs. involuntary) for nonparental status (Calhoun & Selby, 1980; Koropeckyj-Cox, Romano, & Moras, 2007; LaMastro, 2001).

Similarly, there is mixed evidence regarding comparisons of childfree men and women. Some studies claim that childfree men are perceived as negatively as childfree women (Callan, 1985; Kopper & Smith, 2001), while others report less negative evaluations (Lampman & Dowling-Guyer, 1995; Polit, 1978). Moreover, at least one study tentatively suggests that childfree men may be perceived *more negatively* than childfree women (Jamison et al., 1980). Despite the inconsistency of findings, these studies nonetheless suggest that the same dominant social ideologies and pronatalist biases impacting women's parenting choices also influence men. However, highly influential ideas, such as the "Motherhood Mandate" (Russo, 1976), highlight that cultural ideologies surrounding reproduction impact women to a greater *degree* or magnitude than men. Men's power to define social and political roles for women, abilities to pursue "transcendence" while relegating women to "Other," and abstracted relationship with reproduction means that men are likely not subjected to the same pressures to embrace

parenthood as women. Thus, the study of attitudes toward women based on parental status is highly relevant and will be the primary focus of the current study.

Limitations of the current literature. The results of many studies suggest that childfree women are subjected to greater stigma than mothers and involuntarily childless women. However, with few exceptions, the majority of the experimental studies conducted and summarized here have used homogenous samples drawn from undergraduate populations. Most of these samples overrepresent females, and rarely report the racial/ethnic demographics of participants. Moreover, when data on race *are* given, participants are overwhelmingly Caucasian/White. Therefore, the homogeneity of previous samples limits the generalizability of results to more diverse populations. However, this is not to imply that there is no utility in collecting and analyzing data from college populations. Indeed, as representatives of the youngest adult cohort, these participants provide valuable information in their own right, as well as a basis for comparisons of attitudes in older cohorts. Additionally, given the appropriate geographic location, college samples can approximate the diversity observed in national samples. By drawing a sample with a wide variety of racial/ethnic groups, religious affiliations, and socioeconomic statuses, tentative generalizations may be made to wider populations. Rather than discontinuing the use of undergraduate samples altogether, researchers in future studies of attitudes toward childless women could strengthen the generalizability of findings by increasing the *diversity* of their samples. The current study seeks to ameliorate this limitation by drawing a more heterogeneous sample from a college population.

Theory

Stigma. The literature on stigma offers a useful framework for conceptualizing unfavorable social appraisals of women without children. In his classic work, Goffman (1963) proposed that each individual has a *virtual social identity* and an *actual social identity*. In social

interactions, people automatically place others into social categories. This placement into categories creates an expectation, or stereotype, about the attributes and behaviors of the categorized individual. The virtual identity, or the person others think one ought to be, results from these expectations. By contrast, the actual social identity is comprised of the authentic traits or attributes the individual truly possesses independent of social expectations. According to Goffman (1963), when the actual social identity is incongruent with the virtual social identity, the expectations of others are violated. These violations lead to a "spoiled identity" (Goffman, 1963, p. 19) and a reduction in social status. The resultant loss of social standing is the process of stigmatization (Jones et al., 1984). During this process, other negative characteristics are ascribed to the individual on the basis of the single stigmatizing attribute. Therefore, Goffman (1963) defined stigma as a relationship between "an attribute that is deeply discrediting" (p. 3) and a stereotype.

Goffman (1963) identified three types of stigma: *abominations of the body*, *tribal stigma*, and *blemishes of individual character*. Abominations of the body are defined as visible bodily defects, such as scars or burns, missing limbs, disfigurement, or general physical disability. Tribal stigmas are defined as attributes that are passed genetically or through cultural heritage, such as race/ethnicity, religious beliefs, or nationality. Finally, blemishes of individual character are defined by deficiencies in normative behavior, moral reasoning, beliefs, or values. Some common examples may include mental illness, substance addiction, criminal behavior, uncommon political beliefs, or non-heterosexual orientation.

Goffman (1963) also divided stigmatized individuals into two types: the *discredited* and the *discreditable*. Discredited stigmas are immediately apparent and most often can be perceived with a glance at the individual. Examples of this may include abominations of the body, such as the use of a wheelchair, or tribal stigmas, such as being a member of a racial/ethnic minority. On

the other hand, discreditable stigmas are not obviously known or apparent in social settings due to their invisibility. Blemishes of individual character, such as being unemployed or having been imprisoned, would qualify as discreditable stigmas. Thus, although the discreditable individual still possesses a stigmatizing attribute, they have some degree of control over how and when their identity is revealed to others. According to Goffman (1963), discreditable individuals will engage in several forms of information control. First, they will often substitute their stigmatized identity with one that is less stigmatized. Second, in order to avoid awkward social situations and the burden of protecting a secret, discreditable individuals may simply disclose the stigma to others in a very matter-of-fact manner. Finally, the discreditable may engage in "covering" their stigmatized status by casually admitting it, but downplaying its importance.

Other scholars have expanded upon the theoretical foundations of the stigma literature. For example, Link and Phelan (2001) outlined a four-component process of stigmatization. In the first component, individual differences are identified and labeled to create social categories. While the characteristics used to identify differences have varied culturally and historically, this process is universal to all social settings. In the second component, prevailing cultural ideologies link these labels with stereotypes. According to these authors, the process of linking a label to a stereotype is often automatic and "preconscious" (Link & Phelan, 2001, p. 369). In the third component, stereotypes are used to justify the belief that these individuals differ profoundly from others without the same attributes. This process effectively creates an ingroup-outgroup dynamic. In the final component, the outgroup status of the negatively stereotyped leads to a loss of social status and ultimately discrimination. In order for the four-component process to occur, power differentials must exist between groups and lead to social hierarchies. Therefore, Link and Phelan (2001) identified stigma as the "co-occurrence of…labeling, stereotyping, separation, status loss, and discrimination…in a power situation" (p. 363, 382).

According to Jones et al. (1984), the path to stigmatization follows a multistep relational course and can be conceptualized as a "…process in which particular social meanings come to be attached to categories of behavior and to individuals" (p. 81). Jones et al. (1984) first noted that in order to become stigmatized, an individual must bear a *mark*, which they defined as "…perceived or inferred conditions of deviation from a prototype or norm that *might* initiate the stigmatizing process" (p. 8). This mark may or may not be apparent to social others. The status of possessing a yet unrecognized mark makes an individual *markable*; however, once the trait becomes apparent to others, the individual is *marked*. If the subsequent behaviors of the marked person are perceived as confirming some idea of the mark's meaning, then the stigmatization process has begun. The mark then becomes a primary identifier for the individual in social interactions (Jones et al., 1984). Therefore, according to this perspective, stigma is the result of relational processes during social encounters, not an inherent result of possessing a specific trait.

Following Goffman's seminal work, research has confirmed that women without children in the U.S. are a stigmatized social group. According to Goffman's (1963) taxonomy, childfreedom in women would classify as a blemish of individual character due to its violation of gender roles and normative family size expectations. Additionally, because nonparental status is not often an immediately salient feature in social interactions, it can also be classified as a discreditable stigma (Goffman, 1963). Jones et al. (1984) would further categorize childfreedom as a mark that may lead to stigma in social interactions. Because the choice to remain childfree is often an invisible status, many women feel compelled to manage this stigma during social interactions. Indeed, Mueller and Yoder (1999) reported that childfree women use coping strategies to avoid social disapproval, such as only selecting friends who support their decision. Furthermore, in a study by Park (2002), participants recounted a number of identity management techniques. First, in an effort to "pass" as future parents, many childfree women pretend that

they eventually plan to reproduce. Others manage their stigma by substituting the less proscribed identity of *involuntarily* childlessness for their *voluntarily* childfree status. According to Park (2002), many simply feel more adequately prepared to defend infertility because it does not as readily violate social values. In an attempt to reframe negative evaluations, some childfree women will redefine the situation by highlighting their positive contributions to society. Others offer justifications or excuses, often claiming a lack of biological drive or maternal instinct. Finally, childfree women on the defensive will often condemn their condemners or claim the right to self-determined fulfillment.

The Function of Stigma. Terror Management Theory (TMT; Greenberg et al., 1986) may also explain negative attitudes toward and perceptions of women without children. TMT is an evolutionary and existential theory that addresses the fundamental issue of human intergroup conflict (Greenberg, 2012; Pyszczynski, Solomon, & Greenberg, 2003). The underlying premise of TMT is rooted in Darwin's theory of evolution, which postulates that all living organisms, including humans, are biologically motivated to survive and pass genetic material to their offspring. However, unlike other living organisms, the human state of consciousness increases awareness of our impending and inevitable death, a construct known as *mortality salience* (Greenberg, 2012; Greenberg & Kosloff, 2008). Mortality salience leads to an existential anxiety and terror that would be overwhelming were it not for our *cultural worldviews*. According to Pyszczynski et al. (2003), "Cultural worldviews consist of humanly constructed beliefs about the nature of reality that are shared by individuals in a group that function to mitigate the horror and blunt the dread caused by knowledge of the reality of the human condition, that we all die…" (p. 16). We create culture to construct organized and immutable realties that give our lives meaning and significance (Greenberg, 2012). By adhering to the belief systems inherent in our cultural worldviews and believing that we contribute in significant

and permanent ways to these realities, we achieve *symbolic immortality* (Greenberg & Kosloff, 2008). Symbolic immortality is defined as "…the sense that one leaves a lasting mark or symbol of one's existence even after physically dying…" (Greenberg & Kosloff, 2008, p. 1882). Thus, cultural worldviews and symbolic immortality help to ameliorate the constant terror associated with mortality salience.

The concept of self-esteem is fundamental to one's sense of contribution to the cultural worldview and the ability to reduce anxiety about mortality. According to TMT, "Self-esteem is the culturally based belief that one is a valued participant in a meaningful reality" (Pyszczynski et al., 2003, p. 28). In order to bolster self-esteem, an individual must excel in fulfilling the social values and roles prescribed by their cultural worldview (Greenberg, 2012). However, when we are confronted with individuals who adhere to different cultural worldviews, the self-esteem that keeps mortality salience at bay can be threatened (Greenberg et al., 1986). In an attempt to defend our cultural worldviews and alleviate threats to self-esteem, individuals or groups responsible for this threat are often subjected to hostility, prejudice, and stigmatization (Greenberg et al., 1986; Greenberg, 2012; Jackson, 2011). Indeed, research suggests that when mortality salience increases and cultural worldviews are threatened, positive attitudes are reported toward individuals and groups who adhere to the same worldviews, while negative attitudes are reported toward those who do not (Greenberg & Kosloff, 2008; Jackson, 2011). A review by Greenberg and Kosloff (2008) also confirms that stereotyping intensifies when mortality salience is activated. According to these authors, TMT defines stereotyping as "…internalized aspects of our worldviews that make members of other groups seem simpler and more predictable, and in many cases…inferior…" (p. 1886). Indeed, when mortality salience is increased, individuals prefer members of outgroups whose behavior is consistent with accepted stereotypes and dislike those whose behavior is inconsistent (Greenberg & Kosloff, 2008). TMT

thus provides insight into the terror management function of stigmatization of and negative attitudes toward certain social groups.

TMT also has implications for stigmatization of and negative attitudes toward childfree women. When Greenberg et al. (1986) first proposed TMT, they suggested that having children is one of several fundamental ways that individuals manage terror, find personal meaning within their cultural worldview, and achieve symbolic immortality. Indeed, more recent research has demonstrated that the need to produce offspring serves a terror management function. Using a Dutch sample, the first study to assess this mechanism found that mortality salience increased the desired number of children in men (Wisman & Goldenberg, 2005), but that the relation was more complex for women. When the incompatibility of career and motherhood was emphasized, mortality salience did not influence the desired number of children for women. Furthermore, strong career aspirations moderated the influence of mortality salience by *decreasing* the desired number of children for women. However, when career and motherhood were presented as compatible, mortality salience *increased* the desire for children, mirroring findings with male participants. According to these authors, provided that motherhood does not conflict with other important cultural worldviews for women (e.g., professional achievement), anticipated reproduction can reduce mortality anxiety in women.

Further studies both replicate and extend these findings. For example, Zhou et al. (2008) report that mortality salience increased the desire to socialize with children and disapproval for birth control policies in Chinese samples. In a study by Zhou et al. (2009), Chinese participants experiencing mortality salience preferred and spent more time viewing pictures of babies. Furthermore, viewing pictures of baby animals decreased mortality salience and reading about the death of babies increased pessimism regarding life expectancy. This finding illustrates that not only consideration of one's own offspring, but of offspring *in general*, is enough to reduce

mortality salience. Finally, Fritsche et al. (2007) found that mortality salience increased German participants' desire for children and implicit thoughts of offspring. Moreover, anticipating the production of one's own offspring while experiencing mortality salience neutralized negative evaluations of threatening outgroups.

Although these studies do not include American samples, they nonetheless suggest that one cross-cultural function of offspring may be to buffer against mortality salience and associated terror. This buffering effect may be accomplished by providing symbolic immortality and increasing self-esteem through adherence to cultural worldviews. Given the importance of reproduction to the American cultural worldview, it is not surprising that women without children would be subjected to negative attitudes and stigmatization. Because American gender roles link womanhood with motherhood, women who violate these roles may be threatening the established cultural worldview and self-esteem of those who adhere to it. Additionally, that consideration of offspring *in general* influences mortality salience may explain why people, even those with their own children, respond negatively to women who do not parent. Indeed, according to Zhou et al., (2008), "…the desire for offspring is one of the most important ways that people manage their potential terror of death" (p. 417).

Stereotyping. As can be seen in previously described theories, stereotyping is an important component of stigmatization, prejudice, and intergroup conflict. Though stereotyping and stigmatization are discrete processes, research has shown that they are intimately linked. Stereotypes are defined as overgeneralized and commonly shared beliefs about a social group that may or may not be negative, but are generally unfounded (Greenwald & Banaji, 1995; Jones et al., 1984). According to Jones et al. (1984), stereotyping occurs because of the human propensity to order complex environments, which is accomplished by classifying objects into categories. In this way, stereotyping is an efficient and organized representation of a social

group (Crandall, Bahns, Warner, & Schaller, 2011). Once an individual is placed into a category, we tend to attribute other characteristics to that individual based on our previous knowledge about that category (Greenwald & Banaji, 1995). As a result of this classification and generalization, expectancies about the individual are formed. Although a person can be categorized along many dimensions (e.g., race, gender, age, sexual orientation), stigmatization occurs when an individual is defined in social interactions by their placement in a single negative category (Jones et al., 1984). Thus, a "…stereotype is…a presumed correlate between one trait (category membership) and other traits…" (Jones et al., 1984, p. 158) that is often used to justify perceived differences between groups (Crandall et al., 2011).

Although the process of stereotyping is indeed informative in the context of stigma, examining the *content* of stereotyping may be even more illuminating to the study of perceptions of women based on parental status. According to the Stereotype Content Model (SCM; Fiske et al., 2002), competence and warmth are universal dimensions used in human social cognition when evaluating others (Fiske et al., 2002; Fiske, Cuddy, & Glick, 2007). The competence dimension is characterized by traits such as skillfulness, independence, ability, and confidence, while the warmth dimension is characterized by traits such as good-naturedness, sincerity, friendliness, and trustworthiness (Fiske, Cuddy, & Glick, 2002). The SCM suggests that stereotype content based on these two dimensions adheres to systematic principles that emerge as a function of interpersonal and intergroup interactions (Fiske et al., 2002; Fiske et al., 2007). The content of these stereotypes is driven by the social structures of competition and status, which manifest in an outgroup's intent and capability relative to the ingroup (Cuddy et al., 2007; Fiske, Cuddy, & Glick, 2007). For example, outgroups who share the goals of the ingroup (i.e., similar intent) but who possess little capability of reaching these goals are viewed as noncompetitive; they are liked for their warmth but disrespected for their lack of competence.

On the other hand, outgroups who share the goals of the ingroup (i.e., similar intent) *and* possess the capability to reach these goals are viewed as competitive; they are respected for their competence but disliked for their lack of warmth. Indeed, evaluations of warmth and competition negatively correlate, with noncompetitive outgroups perceived as warm and competitive outgroups perceived as cold. In contrast, evaluations of competence and status positively correlate, with high status equated with high competence and low status equated with low competence (Fiske et al., 1999; Fiske et al., 2007).

The SCM therefore posits that the warmth-competency paradigm predicts four clusters of stereotyped groups (Fiske et al., 2002). The first group is unambivalently perceived as high competence-high warmth, and sometimes constitutes one's own ingroup (e.g., the middle class). The second group is unambivalently classified as low warmth-low competence and generally despised (e.g., welfare recipients). However, of particular interest to the SCM are groups classified as low on one dimension and high on the other, constituting ambivalent stereotypes. Indeed, some groups are perceived as high warmth-low competence (e.g., housewives), while others are perceived as low warmth-high competence (e.g., Asians). These mixed stereotypes suggest that prejudice and stereotyping are not purely negative social responses, but are often complex and ambivalent reactions (Fiske et al., 1999; Fiske et al., 2002).

The SCM further suggests that the aforementioned stereotype clusters evoke four distinct patterns of intergroup emotions marked by four types of social comparisons (Fiske et al., 2002; Fiske et al., 2007). Just as the four stereotype clusters are formed by combinations of competency and warmth, emotions evoked by the populations in these clusters are formed by combinations of (dis)liking and (dis)respecting (Fiske et al., 2002; Fiske et al., 2007). First, upward social comparisons with high warmth-high competence groups (e.g., one's ingroup or an admired outgroup) evoke admiration and pride. Such emotions are justified by this cluster's

perceived responsibility for their well-deserved high status (i.e., competence), which reflects positively on oneself and/or admired others in a noncompetitive manner (i.e., warmth). Second, downward social comparisons with low warmth-low competence groups (e.g., the homeless) evoke antipathy, anger, and disgust, which the SCM terms *contemptuous prejudice* (Fiske et al., 2002). Such contempt is justified by this group's perceived responsibility for their negative outcomes (i.e., incompetence) and seemingly exploitative intent (i.e., lack of warmth) relative to the ingroup. Third, upward social comparisons with low warmth-high competence groups (e.g., the wealthy) evoke jealousy and resentment, called *envious prejudice* (Fiske et al., 2002). Jealousy is justified by the group's high, yet unsanctioned social status (i.e., competence), while resentment is justified by their competition (i.e., lack of warmth) relative to the ingroup. Finally, downward social comparisons with high warmth-low competence groups (e.g., the disabled) evoke pity and sympathy. Pity is justified by this group's perceived lack of responsibility for their low status (i.e., incompetence), while sympathy is justified by their lack of competition (i.e. warmth), a combination the SCM characterizes as *paternalistic prejudice* (Fiske et al., 2002).

Furthermore, the behaviors from intergroup affect and stereotypes (BIAS) map, which extends the SCM, predicts four unique behavioral patterns resulting from stereotype content and the emotions evoked by them (Cuddy, Fiske, & Glick, 2007; Fiske et al., 2007). These behaviors occur along two behavioral dimensions of *active-passive* and *facilitative-harmful* (Cuddy et al., 2007). The facilitative-harmful dimension predicts the *valence* of the resultant behavior, with facilitative behaviors (i.e., prosocial) advantaging the target group, and harm behaviors disadvantaging the target group (Cuddy et al., 2007). The active-passive dimension, on the other hand, predicts the *intensity* with which the behavior occurs, with active behaviors being overt and purposeful, and passive behaviors being covert and less intentional (Cuddy et al., 2007). As the primary stereotype dimension, warmth predicts active behaviors, while competency predicts

passive behaviors (Cuddy et al., 2007; Fiske et al., 2007). Active and passive behaviors can be both facilitative and harmful; therefore, the BIAS map predicts four behavioral groupings: (1) *active facilitation*, in which overt behaviors purposefully advantage the target group; (2) *active harm*, in which overt behaviors purposefully disadvantage the target group; (3) *passive facilitation*, in which cooperation/contact with the target group is tolerated; and (4) *passive harm*, in which one rejects the target group, avoiding cooperation/contact (Cuddy et al., 2007).

Studies of the BIAS map (Cuddy et al., 2007), which integrates the cognitive, affective, behavioral components of stereotype content in the SCM, suggest the following patterns: (1) groups stereotyped as high warmth-high competence elicit admiration, resulting in active and passive facilitative behaviors; (2) groups stereotyped as low warmth-low competence elicit contempt and disgust, resulting in active and passive harm behaviors; (3) groups stereotyped as low warmth-high competence elicit envy, resulting in passive facilitative and active harm behaviors; and (4) groups stereotyped as high warmth-low competence elicit pity and sympathy, resulting in active facilitative and passive harm behaviors (Cuddy et al., 2007). The principles of the SCM have been observed in diverse cross-cultural and international samples, implying that evaluations of warmth and competency (along with the emotions and behaviors evoked by them) may be universal components of human interactions (Cuddy et al., 2009).

Women of varying parental statuses may also fall within distinct ambivalent stereotype clusters according to the SCM, a proposition which is supported by previous research into gender stereotypes. For example, a study by Eckes (2002) found that many subtypes of females are subjected to ambivalent stereotyping in Germany. However, this study did not include subtypes based on parental status, with the groups most closely approximating childfree/involuntarily childless women and mothers being the "career woman" and the "housewife" respectively. Despite this conceptual incongruence, it is nonetheless informative that career women fell into

the high competence-low warmth cluster, while housewives fell into the low competence-high warmth cluster (Eckes, 2002). Moreover, career women were rated as the most competent but least warm subtype, while housewives were rated as most warm but least competent. An additional study by Cuddy, Fiske, and Glick (2004) compared perceptions of warmth and competence for working women. Ambivalent stereotypes emerged, with working mothers rated as low competence-high warmth and working childless women rated as high competence-low warmth. However, this study did not differentiate between childfree and involuntarily childless women by stating a reason for nonparental status or future intent to parent (or not parent). As the SCM states, paternalistic prejudice is reserved for those who are perceived to lack control over their outcomes; therefore, when attributions of control are inferred, childfree and involuntarily childless women may be situated in different ambivalent stereotype clusters. Because their nonparental status is presumably due to circumstances beyond their control, involuntarily childless women may be viewed with pity and sympathy (i.e., paternalistic prejudice) and situated in the high warmth-low competence cluster. Childfree women, on the other hand, could fall into the low warmth-high competence cluster. Their perceived responsibility for their nonparental status could evoke resentment and their socioeconomic success (through educational and occupational achievement) could evoke jealousy (i.e., envious prejudice).

In conclusion, as rates of childfreedom increase in the U.S., the childfree population is gradually getting more attention from scholars interested in studying this growing phenomenon. Conceptualizations of stigma, terror management, and stereotype content offer flexible frameworks for examining negative social reactions toward women without children. Though stigmatization of and negative attitudes toward this population may be subtle, childfree women are nonetheless subjected to the labeling, stereotyping, and separation that lead to status loss in social interactions. As research in this area progresses, scholars will develop a more complete

understanding of the nuanced ways in which stigma plays a role in the lives of childfree and involuntarily childless women in the U.S.

Race and Perceptions

Just as participant factors influence acceptance of the childfree choice, target factors may also influence how childfree women are perceived. For example, characteristics such as age, race, occupation, gender, socioeconomic status, and sexual orientation may interact to produce differential social perceptions. Nonetheless, most research has treated women without children as a homogeneous group while largely ignoring potential differences in perceptions along target demographic variables. However, the concept of *intersectionality*, which is based in feminist theory, proposes that each individual is comprised of multiple intersecting identities that form a cohesive whole (Sawyer et al., 2013). More formally, intersectionality is defined as "…the idea that social identities such as race, gender, and class interact to form qualitatively different meanings and experiences" (Warner, 2008, p. 454). First proposed by Kimberlé Crenshaw (1989), this highly influential concept arose from a criticism of a U.S. legal system that ignored the discrimination and subordination of Black women in the evaluation of antidiscrimination laws. At that time, the courts only recognized Black women's race *or* gender as a protected status, but failed to recognize that Black women experience discrimination that is distinct from that of both Black men and White women. Crenshaw (1989) very aptly pointed out that Black women are subjected to compound discrimination due to their membership in more than one disadvantaged group. In other words, discrimination and inequality occur exponentially along multiple axes (Cole, 2009; Crenshaw, 1989).

More broadly, though, intersectionality framework is also a critique of feminist literature, which had previously ignored the differential experiences of women of color. Many past feminist theorists had preferred instead to study and represent "women" as a uniform population

(Crenshaw, 1989; Davis, 2008; Samuels & Ross-Sheriff, 2008). However, the concept of intersectionality suggests that women must be considered in light of their various identities and experiences, including those due to race and class (Davis, 2008; Samuels & Ross-Sheriff, 2008; Sawyer et al., 2013). Accordingly, these identities should not be studied in isolation, but rather as how they relate to one another to produce outcomes (Sawyer et al., 2013; Samuels & Ross-Sheriff, 2008; Warner, 2008; Warner & Shields, 2013). These identities are ever-changing, intertwined, and contribute equally to female identity (Davis, 2008), and should be considered in the context of the personal, cultural, and institutional experiences that influence inequality (Davis, 2008; Samuels & Ross-Sheriff, 2008; Warner, 2008; Warner & Shields, 2013). Thus, an intersectionality approach recognizes that female identity is a complex crossroads of multiple perspectives and, as such, should be studied for its diversity (Sawyer et al., 2013).

The concept of intersectionality suggests that research examining the childfree and involuntarily childless must acknowledge that the identities of women in this population are multidimensional. Consequently, it is not sufficient to study women without children as a singular group. Rather, race and childlessness may interact in a complex crossroads of identity that influences outcomes. For example, research has demonstrated that, historically, there has been a greater rate of childlessness for White women than Black women in the United States (Boyd, 1989). In explaining this disparity, White childlessness was often attributed to a lifestyle choice (i.e., choosing to remain childfree) or delayed childbearing leading to infertility, while childlessness in Black communities was attributed to poverty, disease, and inadequate access to healthcare (Boyd, 1989; Lundquist et al., 2009). Though disentangling the *past* causes of childlessness (voluntary vs. involuntary) has been challenging, research suggests that *current* rates of childfreedom are converging and may, in fact, be identical for Black and White women (Abma & Martinez, 2006; Boyd, 1989; Jacobson & Heaton, 1991; Lundquist et al., 2009).

Indeed, several studies suggest that contemporary childlessness may be due to a number of factors common to both races. For example, Lundquist and colleagues (2009) found that increased divorce rates, higher educational achievement and socioeconomic status, delayed childbearing leading to infecundity, and the childfree choice predicted childlessness equally for Blacks and Whites. Only a few variables, such as marital status and non-marital childbearing, predicted Black-White differences in childlessness, with unmarried Black women being more likely to become mothers than unmarried White women (Lundquist et al., 2009). Additionally, Boyd (1989) suggested that converging rates of childfreedom are occurring because women of both races are experiencing increased opportunities for social mobility, greater educational achievement, and widespread availability of birth control/contraceptives. Furthermore, evolving family values and the decreasing prevalence of the traditional nuclear family may also be driving these trends (Boyd, 1989).

However, that rates of childlessness are converging for all races/ethnicities is not consistent across studies. Heaton et al. (1999) found that White individuals were more likely to be childfree than Black individuals. Bachu (1999) reports that, although rates of childlessness are similar for *married* Black and White women, rates of childlessness are higher for *unmarried* Whites than Blacks, a finding confirmed by Lundquist et al. (2009). Additionally, data from the 2006-2012 National Survey of Family Growth (NSFG) indicate that a large proportion of childfree women were White (72%), with only 11.1% being Black, 8.8% being Hispanic, and 3.3% being Asian (Martinez et al., 2012). Studies also suggest that rates of childfreedom may be higher for non-Hispanic women than Hispanic women (Abma & Martinez, 2006; Bachu, 1999). Though the *reasons* for childlessness were not assessed, Dye (2008) reported that 14.4% of Hispanic women aged 40 to 44 were childless in 2006, compared with 21.2% of White women, 18.1% of Asian women, and 16.4% of Black women. Additionally, Abma et al. (1997) reported

that only 3.7% of Hispanic women aged 15 to 44 expect to remain childfree, compared with 10.1% of White women and 7.5% of Black women. Though these estimates vary, all demonstrate that rates of childfreedom and childlessness tend to be greater for White women when compared with other racial minority groups.

Given these disparate trends, it is conceivable that racial group membership may produce greater stigma for some childless women over others. However, only two studies to date have examined the intersection of race and perceptions of the childless. In the first study, Koropeckyj-Cox et al. (2007) asked participants to rate the personalities of a childless couple described in written vignettes. In these descriptions, the couple's race, the wife's occupation, and the husband's occupation were manipulated. A subset of participants also reported their assumptions regarding the motivations for the couples' childlessness, including temporary childlessness, involuntary childlessness, or voluntarily childfreedom. Koropeckyj-Cox et al.'s (2007) results indicate that race of the targets was not significantly related to personality ratings of the childless couple. However, consistent with previous research, the couple was perceived more favorably when it was assumed they would eventually parent rather than remain permanently childless. According to these authors, this particular finding may indicate that delayed parenting is becoming more acceptable, while permanent and voluntary childfreedom is still perceived negatively.

In a second study, Vinson et al. (2010) also used an analogue research design to investigate the relation between race and perceptions of childfree women. After reviewing a written vignette describing a couple with varying race (Caucasian/White vs. African American/Black) and number of children (two vs. none), participants rated only the wife's perceived personality traits. Vinson et al.'s (2010) results indicate that mothers were rated significantly more positively than childfree women. Though target and participant race alone did

not influence ratings, there was a significant interaction between target parental status and race. Specifically, Black mothers were rated more positively than Black childfree women, although ratings did not differ for White targets regardless of parental status. Vinson et al. (2010) explain these findings by proposing that gender roles are more rigidly enforced for Black women over White women. In addition, because the childfree were rated more negatively than mothers regardless of race, Vinson and colleagues suggest negative evaluations of childfree women may be universal.

By examining the relation between race and perceptions of childless women, these two studies make an important contribution to an area largely ignored by previous research. However, several limitations to these studies may explain their contradictory findings. First, because parents were not included as targets in their vignettes, Koropeckyj-Cox et al. (2007) admittedly could not compare perceptions of childless couples with those of parents. Additional factors, such as the race of targets, may play a role in perceptions under such comparisons. Second, due to convenience sampling of undergraduate students, the mean ages of these samples were 19.1 (*SD* = 1.73, Koropeckyj-Cox et al., 2007) and 20.66 years (*SD* = 4.14, Vinson et al., 2010), and the majority of participants in both studies were White (62-65%). Conceivably, perceptions of women without children may vary within an older and more racially diverse sample. Furthermore, Koropeckyj-Cox et al.'s (2007) sample was predominantly female (~75%), while Vinson et al.'s (2010) study consisted of *only* female participants; however, the approximately equal inclusion of both male and female participants may have produced different results. Finally, and perhaps most important, the race of targets was dichotomized to only Black and White in both studies; therefore, conclusions cannot be drawn about the perceptions of childfree Hispanic and Asian American women. Such limitations prevent these results from being generalized to more heterogeneous populations and research targets.

As the childfree trend slowly increases, additional research is required to establish the origin, nature, and evolution of social perceptions of childfree women in the U.S. As suggested by Vinson and colleagues (2010), differences in social perceptions may exist across cultural and racial groups. Yet, despite the pervasive influence of intersectionality in multiple disciplines, there is a dearth of research examining the combined influence of race and parental status on social perceptions and attitudes. As demonstrated, only a few studies have examined attitudes at the intersection of race and parental status and these studies have produced contradictory findings. Furthermore, these few studies have only investigated differences between Black and White targets, and have ignored social perceptions of Hispanic and Asian women. However, Sawyer et al. (2013) stated that it cannot be assumed that racial/ethnic minorities share similar experiences merely due to their minority group membership. Although little empirical evidence exists in previous studies to support the hypothesis that target race interacts with target parental status to influence the attitudes, the concept of intersectionality implies that identification with more than one disadvantaged status can intensify negative outcomes. Using an intersectional approach, future research must acknowledge cultural diversity in order to clarify the relation between race and parental status. Thus, studies of perceptions should include representations of each major racial category to avoid inaccurate generalizations on the basis of homogeneous research targets. Although the racial groups represented as targets in the current study are by no means exhaustive, the current study addresses how race and parental status interact to influence social perceptions of women in the U.S.

Labels and Perceptions

A fundamental concept in the activation of stereotypes is the tendency for humans to categorize objects around them (Jones et al., 1984). According to social psychologists, categorization of social others into groups is a mental heuristic that is meant to save time and

energy (Jones et al., 1984). Implicit in this process of categorization of social objects is the concept of labeling, or applying a label to a social target. According to Jussim, Nelson, Manis, and Soffin (1995), labeling effects occur when perceptions or appraisals of others are contingent upon the label the target receives. Once categorization is conducted, a host of assumptions are made on the basis of these categorizations. These assumptions are drawn from our previous knowledge, or stereotypes, about that object, individual, or social group (Jones et al., 1984). When generalizations are made to an entire group of individuals on the basis of categorization, a stereotype has been activated. The process of categorization and stereotype activation is thought to be largely automatic (Jones et al., 1984).

Diagnostic labels. Previous research in several areas has documented the impact of label choice on social perceptions. Perhaps one of the most well-known of these studies is the Rosenhan Experiment (1973), which demonstrated that, even in the absence of confirmatory behavior, a simple label influences social perceptions. In this study, eight psychologically healthy individuals assumed the role of "pseudopatients" to gain admittance to psychiatric hospitals. Following a presentation of auditory hallucinations, seven of eight pseudopatients were given diagnoses of schizophrenia. However, after diagnosis and admittance, they behaved normally and reported an abatement of their initial symptoms. Despite this, their "normal behaviors were overlooked entirely or profoundly misinterpreted" (Rosenhan, 1973, p. 253) by hospital staff. Ultimately, the schizophrenic label had powerful effects on perceptions of the pseudoclients, causing many to remain hospitalized for months.

Other studies also confirm the influence of diagnostic labels on the appraisals of others. For example, Penn and Nowlin-Drummond (2001) assessed the effect of the terms 'consumer of mental health services,' 'person with schizophrenia,' 'person with severe mental illness,' and 'schizophrenic' on negative perceptions. Participants reported the most positive emotionality to

the term 'consumer of mental health services' over the latter three terms, which did not differ significantly. Despite the fact that these terms essentially held the same meaning (i.e., referring to individuals experiencing mental illness), these results indicated that the term 'consumer of mental health services' had the greatest potential for destigmatization of this population.

Gendered labels. Although the results of early research into gendered language are dated and may not be replicable, they nonetheless also illustrate that labels can influence social perceptions. For instance, an article by Lerner (1976) outlined the meanings implied by the various terms used to refer to females. The first term, 'girl,' communicates a sense of frivolity in which serious intellectual and competitive ambitions are lacking. This term also tends to neutralize associations with prominence, authority, and importance of purpose. The second term, 'woman,' has erotic, aggressive, and reproductive connotations. The final term, 'lady' effectively diffuses the threatening inferences of 'woman' by purifying and asexualizing the female. To use the term 'lady' is to imply the absence of sexual and aggressive urges. Though ladies may be accomplished and possess authority, the term remains congruent with the triviality of girlhood. Despite the fact that each of these terms refers to the female gender, each has profoundly different social meanings.

Experimental studies have also assessed social reactions as a function of gendered labels. For example, Heilman (1975) examined social appraisals by manipulating instructor prefixes listed in college course descriptions (i.e., Miss, Mrs., Ms., Mr., or no title). Participants rated nontechnical courses as less enjoyable and intellectually stimulating when they were being taught by a 'Miss' or a 'Mrs.' However, courses being taught by a 'Ms.,' 'Mr.,' or an instructor with no title were not viewed negatively. The most remarkable finding of this study was that gender bias did not extend to the instructors with 'Ms.' in their title, although 'Miss,' 'Mrs.,' and 'Ms.' are all female prefixes.

Additionally, a study by Jacobson (1979) found that the terms 'feminism,' 'women's lib,' 'equal rights for women,' and 'women's liberation' produced varying attitudes toward the concept of "women's political, economic, and social rights" (p. 365). Although all four terms referred to the same concept, 'equal rights for women' was viewed most positively, while 'women's liberation' was rated least positively. Moreover, despite the fact that 'women's lib' and 'women's liberation' are nearly identical terms, the former was rated as the second most positive term, while the latter was rated most negatively. This finding demonstrates that, despite considerable similarity, words that denote the same concept can have very different connotations.

Body size labels. Studies into the stigmatization of obese individuals also confirm the effect of labels on social perceptions. Although the terms 'overweight,' 'obese,' and 'fat,' are often used interchangeably, research demonstrates that each term has implications for perceptions of the described individual. For instance, Smith, Schmoll, Konik, and Oberlander (2007) demonstrated this by varying women's personal ads to include positive (full-figured), negative (obese, overweight, or fat), objective (weight in pounds), or no weight descriptors. Individuals in ads with negative descriptors were rated as less healthy and attractive, and fatter than individuals in either the positive or control ads.

Vartanian (2010) also established that a label can influence perceptions of heavy-weight people by varying the terms 'obese' or 'fat' in a questionnaire. Results revealed that 'obese' people were rated more negatively than 'fat' people. Specifically, participants rated the 'obese' target as more disgusting and dissimilar to themselves than the 'fat' target. Participants also reported that they were less likely to become 'obese' themselves. These authors concluded that "…specific terms used to label…can potentially magnify or diminish the expression of negative attitudes…" (Vartanian, 2010, p. 197).

Disability labels. Research on the stigmatization of persons with disabilities also suggests that labels can influence perceptions. For example, Millington and Leierer (1996) found that participants responded *more* positively to a politically incorrect, label-first term (*the disabled*) than to a politically correct, person-first term (*person with a disability*). Researchers speculated that the positive responses were an attempt to compensate for the use of the politically incorrect, label-first language because it violated the norms of the 81 rehabilitation professional participants. Nonetheless, when describing persons with disabilities, the label choice influenced perceptions.

Racial labels. Finally, racial labels also have the power to impact perceptions. Indeed, Zilber and Niven (1995) found that an identical political speech and candidate were perceived more negatively when the term 'African American' was used instead of 'Black.' Candidates who used the term 'African American' were perceived as more concerned with only one social group, and less likable and persuasive than the candidate who used the term 'Black.' These authors proposed that "…the label by which a group is known can convey important information about the group" (Zilber & Niven, 1995, p. 655).

Labels and the childless. As demonstrated by research in diverse fields, social perceptions can differ as a function of label. Both negative and positive perceptions can be intensified or lessened by the term used to describe a group. Even words that are nearly identical can communicate very different meanings in a social context. A review of the literature reveals that women without children are referred to by a myriad of terms that vary depending on the underlying reasons for the status. For example, women who want to but are unable to have children are often referred to as 'childless,' 'involuntarily childless,' 'infertile,' 'infecund,' or 'subfecund.' On the other hand, women who are *able* to have children but *choose* not to are often referred to as 'childfree,' 'voluntarily childless,' or 'childless-by-choice.' However, more

often than not, research fails to distinguish between these two groups, and instead uses "childlessness" as a blanket term applied to all people who do not reproduce (Houseknecht, 1987). Yet, even among women who choose not to parent for various reasons, controversy remains over which terms are appropriate. A perusal of online articles, blogs, and forums reveals an impassioned debate over two terms in particular: 'childless' and 'childfree.' Several revealing quotations follow:

> The term "childless" with emphasis on the suffix '-less' here seems to imply that people without children are somehow less for it, or put another way, like we're somehow lacking something in our lives. The term is generally seen as negative, and is often used, quite frankly, as an insult… (coolchildfreeguy, 2012)
>
> I have chosen not to have children. I identify as childfree, not childless, to stress the fact that I don't have children, don't want them, and am not interested in them…I am happy that I don't have children. I don't plan on having them, and I don't feel 'less' or bereft because I don't have them. (Smith, 2009)
>
> …I most definitely won't use childfree. It is 'childless' for me. The 'childfree' word has…for me, the idea that I'm 'okay' with it, or that I chose it. I'm not, I did not…My life is happy…But not having children is painful & I think it will be a life-long grief for me. (Kathryn, 2010)
>
> I'm not 'childless.' I'm not missing any parts or less than the sum of a whole. I'm 'childfree.' As in, my life is free of children, and by choice. Not barren. Bursting with contentment. Not childless. Childfree. Free! (Bordeaux, 2012)
>
> …not everyone who doesn't have kids is childfree. Some of us are actually child*less* and that is an important distinction. There are some people who really want children and can't have them, for a whole variety of reasons: infertility, unstable relationships, problems with medications, and other factors. For them, not having children is not a matter of rejoicing and happiness, a consciously chosen decision that affirms their desires. It's heartbreak. It's tragedy. (Smith, 2012)

Explicit denotations of the terms 'childless' and 'childfree' communicate an identical concept: that the woman is not a mother. Semantically-speaking, these two terms *should* be interchangeable. However, as suggested by the above quotations, these terms are laden with profoundly different social meanings. Rather than simply communicating the absence of children, the 'childless' label is thought to communicate a distinct attitudinal viewpoint: that the

woman wants children but is unable to have them. On the other hand, the 'childfree' label communicates the opposite disposition: that the woman neither has nor *wants* children.

Some authors do acknowledge the significant difference between these two terms (Gillespie, 2003; Letherby, 2002). For example, Gillespie (2003) noted that "Language used to define the state of not giving birth to children has previously existed only in terms of an absence or deficiency of motherhood…" (p. 123). Additionally, Gold (2013) remarked that "The very term *childfree* as compared to childless changes the orientation toward the role of children. The first term speaks of liberation from the responsibilities of childrearing while the second implies some deficiency in the relationship" (p. 225). However, although these scholarly reflections are thought-provoking, and certainly imply that the terms are *not* interchangeable, no study to date has examined the effects of these two labels on perceptions of women without children. Previous research reviewed here does reveal that when the reasons for childlessness are given, different perceptions emerge of involuntarily childless and childfree women. As has been stated earlier in this review, childfree women are perceived more negatively than involuntarily childless women (Kopper & Smith, 2001; Lampman & Dowling-Guyer, 1995). However, studies have not assessed how perceptions vary when the explanation given for childlessness is a single, minimally-descriptive term, such as 'childless' or 'childfree.'

Admittedly, it is reductionist to assign non-parents to only one of two groups. As suggested by Letherby (2002), it may be more precise to conceptualize childlessness on a continuum with the involuntarily childless at one extreme and the voluntarily childfree at the other. An individual's location on this continuum may fluctuate at any given point in time due to life choices and circumstances. However, the social utility of these two terms is important for a number of reasons. First, as discussed, humans have a tendency to categorize others and make social judgments based on very little information (Jones et al., 1984). Second, these

categorizations often happen automatically and unconsciously (Greenwald & Banaji, 1995). Third, they result in the automatic and often unconscious (i.e., implicit) activation of stereotypes (Greenwald & Banaji, 1995; Jones et al., 1984). By their very nature, these categorizations do not acknowledge the continuous nature of human qualities. Simply put, the day-to-day social interactions of individuals and groups tend to be reductionist.

Information regarding the parental status of women is most often revealed through social interactions (Park, 2002). In these interactions, childfree and involuntarily childless women may not have the opportunity or the desire to explain the often complex and personal reasons for their status. Indeed, parental status may be communicated with a mere statement from which all sorts of inferences can and will be made. Therefore, an empirical examination of just what precisely is communicated by these two terms would be useful. If, in fact, the difference between 'childless' and 'childfree' is as value-laden as scholarly reflections and the blogosphere suggest, the mere manipulation of these terms should be sufficient to evoke differing perceptions in the absence of reasons for childlessness. Because previous research has demonstrated that perceptions vary between childfree women and involuntarily childless women, it can be reasonably expected that perceptions, attitudes, and stereotypes will differentiate the terms 'childless' and 'childfree.' It is anticipated that perceptions of the 'childfree' term will be consistent with perceptions in previous studies of women who voluntarily choose not to parent. It is further anticipated that perceptions of the 'childless' term will be consistent with perceptions in previous studies of the involuntarily childless. Furthermore, different types of ambivalent stereotypes, as outlined by the SCM, will differentiate childless and childfree women. Such findings in the current study would provide some support for the idea that the terms 'childfree' and 'childless' are not interchangeable and do, indeed, have different social meanings.

Implicit Attitudes

Attitudes are classically defined as "…favorable or unfavorable dispositions toward social objects, such as people, places, or policies" (Greenwald & Banaji, 1995, p. 7). Explicit attitudes, in particular, are defined as dispositions of which subjects are aware, that require cognitive energy and effort, and that can be identified and controlled (Dasgupta, 2010; Nosek, 2007). Assessments of explicit attitudes usually consist of directly asking participants to report their attitudes.

In contrast, implicit attitude are defined as "…introspectively unidentified (or inaccurately identified) traces of past experiences that mediate favorable or unfavorable feeling, thought, or action toward social objects" (Greenwald & Banaji, 1995, p. 8). Critical to any definition of implicit attitudes and/or cognition is the idea that these processes occur beyond one's conscious awareness or control (Greenwald & Banaji, 1995; Nosek, 2007). Implicit measures assess the automatic processes that trigger implicit attitudes (Greenwald et al. 1998; Schnabel et al., 2008) in an indirect fashion or outside the explicit awareness of participants (Fazio & Olson, 2003; Greenwald & Banaji, 1995; Nosek et al., 2011; Hofmann et al., 2005; Rezaei, 2011). The ability to assess attitudes implicitly is valuable because of the tendency of participants to respond to self-report measures, especially those assessing phenomena such as stereotypes or negative attitudes, in a socially desirable way (Fazio & Olson, 2003; Greenwald & Banaji, 1995; Greenwald et al., 2009; Hofmann & Schmitt, 2008; Schnabel et al., 2008). Research also suggests that implicit measures not only assess attitudes that participants are uninclined or hesitant to endorse, but also attitudes that they are incapable of identifying (Nosek, 2007). Indeed, according to Nosek (2009) "…implicit evaluation reflects accumulated experience that may not be available to introspection and may not be wanted or endorsed but is still attitudinal because of its potential to influence individual perceptions, judgment, or action"

(p. 68). Although it has been demonstrated that implicit measures are fakable, they are much less susceptible to fakability than explicit measures using self-report (Gawronski, 2009; Schnabel et al., 2008; Steiger, Göritz, Hergovich, & Voracek, 2011).

However, it is important to note that the implicit-explicit distinction in describing attitudes is not universally accepted. For example, Fazio and Olsen (2003) suggest that the use of 'implicit-explicit' implies that people are unaware of the attitudes they possess. These authors argue that, although the IAT *indirectly* assesses attitudes, IAT results do not indicate that participants are necessarily *unaware* that they hold certain attitudes. On the contrary, participants may be perfectly *aware* that they hold attitudes toward targets but may be *unwilling* to admit to them on direct attitudinal measures. Thus, these authors suggest that it is the measure itself that should be referred to as 'implicit.' Nonetheless, the IAT provides an indirect and/or implicit way of assessing attitudes that participants might otherwise not admit to possessing.

The correlation between explicit and implicit measures varies widely depending on the constructs being assessed (Greenwald et al., 2003). For example, Greenwald et al. (2003) reported implicit-explicit correlations ranging from .11 to .69 across multiple types of attitudes (e.g., Age, Gender-Science, Race, Election 2000). More specifically, social desirability bias and self-presentation often motivate participants to mask negative explicit attitudes, such as racism or prejudice. These concerns are especially potent in situations where negative evaluations of others could damage one's self-image and/or produce detrimental social outcomes. Indeed, under such circumstances, correlations between an explicit and implicit measure tend to be weak (Cunningham et al., 2001; Fazio & Olsen, 2003; Greenwald et al., 1998; Greenwald et al., 2009; Greenwald & Banaji, 1995; Nosek, 2007; Schnabel et al., 2008). For example, outcomes on explicit measures of racist attitudes tend to significantly diverge from outcomes on implicit measures (Cameron et al., 2012; Cunningham et al., 2001; Greenwald et al., 1998). Conversely,

research suggests that when the evaluations of the target are less value-laden than phenomena such as stereotypes and prejudice, implicit and explicit measures do tend to positively correlate (Fazio & Olsen, 2003). Thus, research supports the supposition that implicit and explicit attitudes are related, but partially independent constructs (Cunningham et al., 2001; Dasgupta, 2010; Hofmann et al., 2005b; Nosek, 2007; Nosek et al., 2011).

Implicit-explicit attitudes relations are also dependent upon a variety of other moderating factors (Gawronski, LeBel, & Peters, 2007; Hofmann et al., 2005a; Schnabel et al., 2008). Indeed, according to Hofmann and Schmitt (2008), "…the direct-indirect relationship is highly conditional on a large range of personal, situational, and methodological boundary conditions" (p. 208). For instance, intrapersonal factors, such as the degree of personal experience with an attitude object, and importance and accessibility of the attitude influence implicit-explicit relations. The structure of attitudes also has an influence; highly polarized attitudes in which favorable evaluations of one object (e.g., belief in a deity) are mutually exclusive with favorable evaluations of another (e.g., Atheism) also increase the strength of implicit-explicit relations (Nosek, 2007). Additionally, a meta-analysis by Hofmann et al. (2005a), which found a correlation of .24 between implicit and related explicit measures, reported that this relation was mediated by the spontaneity of self-reporting on the explicit measure and the implicit-explicit conceptual correspondence. As both spontaneity and conceptual correspondence increase, correlations between the implicit and explicit measures also increase (Cameron et al., 2012; Gawronski et al., 2007; Greenwald et al., 2009; Schnabel et al., 2008). Further studies suggest that the incentive, opportunity, capability, and cognizance to consider and control the construct being assessed may influence outcomes (Fazio & Olsen, 2003; Nosek et al., 2011).

In addition to providing a review of the literature, Hofmann et al. (2005b) proposed a five-factor model outlining the overarching processes that moderate the consistency of implicit-

explicit relations. This model assumes that implicit and explicit representations are unique attitudinal elements that can be assessed separately, but that nonetheless exert a bidirectional influence on one another (Hofmann et al., 2005b). According to these authors, implicit representations are automatically activated associations that occur beyond an individual's awareness and without effort, therefore consuming little cognitive energy. Implicit or associative processes can exert an influence regardless of whether they are actually accurate. Explicit representations, on the other hand, are "higher-order" knowledge that an individual can identify and that require cognitive energy. Explicit representations typically exert an influence provided their accuracy or "truth value" is embraced (Hofmann et al., 2005b).

According to this model, all moderators of implicit-explicit relations fall within one of five categories (Hofmann et al., 2005b). The first type of moderator, *translational* factors, addresses communication between implicit and explicit representations. These include representational strength (e.g., importance, certainty, level of experience), dimensionality (e.g., bipolar vs. continuous), distinctiveness (e.g., stronger or weaker than norms), and awareness of the attitude. Strong, bipolar, distinct attitudes of which individuals are aware tend to have highly consistent implicit-explicit relations. The second type of moderator is *information integration*, or the degree to which an individual reconstructs, produces, and collects information. This includes factors such as spontaneity and cognitive dissonance. Explicit attitudes that are spontaneous and cognitively dissonant most closely resemble implicit attitudes. The third type of moderator are factors that influence *explicit assessment*, including adjustment processes (e.g., social desirability bias), degree of outgroup threat, and method-specific factors (e.g., response set biases). Explicit attitudes that are unadjusted, directed toward highly threatening outgroups, and free of method-specific variance tend to converge with implicit attitudes. A fourth type of moderator includes factors that influence *implicit assessment*, such as situational malleability

(e.g., state vs. trait variance, positive vs. negative context), method-specific factors (e.g., task order, cognitive fluency, previous experience, faking), and reliability. When context and extraneous variables are controlled, and implicit assessments are reliable, implicit-explicit relations are consistent. Finally, *design factors* also moderate implicit-explicit relations. These include research processes irrelevant to the constructs of interest, such as sampling bias, presentation order of measures, and conceptual correspondence between measures (e.g., similar content and specificity, relative vs. absolute measurement, cognitive vs. affective evaluation). Implicit and explicit measures that are conceptually similar and administered to appropriately diverse samples will demonstrate the most consistent implicit-explicit relations.

It is also important to note that implicit and explicit attitudes may predict behavioral outcomes in different ways (Hofmann et al., 2005b), although the literature is inconsistent in this regard. In a meta-analysis of 122 studies with 184 samples by Greenwald et al. (2009), implicit attitudes predicted behavior across an assortment of domains, including physical behaviors, evaluations, preferences, and physiological responses. Implicit attitudes correlated most strongly with explicit measures for political and consumer preferences; however, when predicting behavior, implicit attitudes exceeded that of self-report measures when assessing sensitive topics, such as racial/ethnic attitudes and behaviors. An additional meta-analysis of 167 studies by Cameron et al. (2012) found that implicit attitudes predicted behavioral outcomes, even when controlling for explicit attitudes, social sensitivity of the topic, domain type, and ability to control one's responses. Consistent with the findings of Greenwald et al. (2009), when implicit-explicit relations were strong, the ability of implicit attitudes to predict behavioral outcomes was also strong (Cameron et al., 2012). However, a more recent meta-analysis of 86 samples by Oswald et al. (2013) controlled for the moderating effects of discrimination domain, operationalization of discrimination, type of implicit measure (i.e., attitude vs. stereotype),

scoring method (e.g., relative vs. absolute), and type of explicit measure. In this meta-analysis, implicit measures were no more (and in some cases *less*) predictive of ethnic and racial discrimination than explicit measures; in fact, both implicit and explicit *weakly* predicted behavior. However, it is unclear whether the stark differences between findings from these meta-analyses accurately estimate the predictive validity of implicit and explicit measures or are an artifact of different methodological approaches or measurement limitations. Thus, it appears that researchers are still attempting to clarify how well implicit and explicit attitudes predict actual behaviors.

Despite the vast literature on the implicit-explicit domain, no study to date has attempted to assess implicit attitudes toward childfree individuals, involuntarily childless individuals, and parents. Analogue designs have provided researchers with an indirect method of assessing attitudes toward childfree individuals. However, if the aim of the study is discovered by participants, social desirability bias is likely to influence results. Therefore, an indirect measure that is less susceptible to fakability or dishonesty in self-report would be a welcome addition to the body of literature on perceptions of individuals without children. Moreover, assessing the relation of implicit and explicit attitudes toward childfree individuals, childless individuals, and parents would shed additional light on the nature of such attitudes.

Statement of the Problem

Studies of perceptions of childfree women have found that this population is perceived more negatively than mothers and involuntarily childless women. However, the homogeneity of college student samples has limited the generalizability of these findings to more heterogeneous populations. Additionally, even though intersectionality has become a multi-disciplinary approach, little research has attempted to clarify the interaction between race and parental status and its influence on perceptions of women. The few studies that have assessed this relation have

reported contradictory findings. Furthermore, previous literature has conceptualized negative perceptions of women without children in a relatively unidimensional and negative fashion; however, none has assessed the potentially ambivalent nature of stereotypes of women based on various parental statuses. Moreover, no empirical study has attempted to clarify that the terms 'childfree' and 'childless' carry different social meanings outside of academia. Finally, no study has assessed implicit attitudes surrounding parental status or examined their relation to explicit attitudes.

Thus, the current study has several aims. First, it attempts to replicate previous findings demonstrating negative perceptions of childfree women when compared with involuntarily childless women and mothers. Second, this study attempts to clarify the intersecting influence of race and parental status on perceptions of mothers, involuntarily childless women, and childfree women. A third aim of the current study is to examine the content of stereotypes for childfree women, involuntarily childless women, and mothers using a measure of the Stereotype Content Model. Fourth, the current study assesses the influence of the terms 'childless' and 'childfree' on perceptions of women without children. The fifth aim of this study is to create three concept-valence Single Category Implicit Association Tests (SC-IAT) to assess implicit attitudes toward parents, childless individuals, and childfree individuals. The sixth and final aim of the current study is to explore the relation between implicit and explicit attitudes toward parents, involuntarily childless individuals, and childfree individuals. By accomplishing these aims, this study makes a unique and original contribution to the literature on perceptions of women and individuals without children.

The current study uses the dependent variables of Interpersonal warmth, Agency/Drive, and Negative Emotionality to assess perceptions of women for two of four hypotheses. Previous research using these variables to assess perceptions of childless individuals found that ratings of

Interpersonal Warmth and Negative Emotionality varied with manipulations of parental status (LaMastro, 2001; Koropeckyj-Cox et al., 2007). However, only manipulations of occupational status, which will be held constant in the current study, produced variations in ratings of Agency/Drive in prior studies (LaMastro, 2001; Koropeckyj-Cox et al., 2007). Thus, based on previous research, the current study tests the following hypotheses:

1) Perceptions will vary for women described as mothers, childless, and childfree.
    a. Women described as mothers will be rated more positively than women described as childless and childfree.
        i. Women described as childless and childfree will be rated lower on Interpersonal Warmth than women described as mothers.
        ii. Because occupational status will be held constant across conditions, women described as childless and childfree will be rated the same in Agency/Drive as women described as mothers.
        iii. Women described as childless and childfree will be rated higher on Negative Emotionality than women described as mothers.
    b. Women described as childless will be rated more positively than women described as childfree.
        i. Women described as childfree will be rated lower on Interpersonal Warmth than women described as childless.
        ii. Because occupational status will be held constant across conditions, women described as childfree will be rated the same in Agency/Drive as women described as childless.
        iii. Women described as childfree will be rated higher on Negative Emotionality than women described as childless.

2) There will be an interaction between the race and parental status of women, with women of racial minority groups described as childless and childfree being perceived more negatively than Caucasian/White women described as childless and childfree.
    a. Women of racial minority groups described as childless and childfree will be rated lower on Interpersonal Warmth than Caucasian/White women described as childless and childfree.
    b. Because occupational status will be held constant across conditions, women of racial minority groups described as childless and childfree will be rated the same in Agency/Drive as Caucasian/White women described as childless and childfree.
    c. Women of racial minority groups described as childless and childfree will be rated higher on Negative Emotionality than Caucasian/White women described as childless and childfree.
3) Stereotypes will vary by the label chosen to describe women, with mothers, childless women, and childfree women being differentiated by stereotypes according to the Stereotype Content Model.
    a. Mothers and childless women will be rated high in Warmth, but low in Competence, demonstrating ambivalent, paternalistic stereotypes.
    b. Childfree women will be rated low in Warmth, but high in Competence, demonstrating an ambivalent, envious stereotype.
4) An implicit association effect, as measured by implicit attitudes on the SC-IAT, will be observed for each of three parental statuses (parents, childless, childfree).

a. Automatic implicit associations will be stronger when the concept of parent is paired with positive attributes than when parent is paired with negative attributes.
b. Automatic implicit associations will be stronger when the concept of childless is paired with negative attributes than when childless is paired with positive attributes.
c. Automatic implicit associations will be stronger when the concept of childfree is paired with negative attributes than when childfree is paired with positive attributes.

5) Implicit attitudes, as measured by SC-IAT *D*-scores, will be more positive for the concept of parents than the concepts of childless and childfree.
6) Negative implicit associations will be stronger/more negative for the concept of 'childfree' than for the concept of 'childless.'
7) Significant and positive correlations will be observed for the relation between implicit-explicit attitudes toward parents, childless individuals, and childfree individuals.

Method

Participants

Participants were recruited from Virginia Commonwealth University's (VCU) undergraduate research pool in the psychology department. Students in this pool were enrolled in an introductory psychology course (Psychology 101) in which they received partial class credit for participation in research studies. However, because students are also offered alternative assignments to receive this credit, research participation was completely voluntary. The only selection criterion was that participants must be aged 18 years or older.

Table 1 presents participant characteristics for the study's categorical demographic variables, and Table 2 presents participant characteristics for the study's continuous demographic variables. The sample consisted of 386 undergraduate students whose ages ranged from 18 to 56 (M = 20.60, SD = 3.45). The sample was predominantly female (66%) and heterosexual (93%), and the most frequently self-reported racial/ethnic identities were Caucasian/White (46%), African American/Black (24%), and Asian/Pacific Islander (13%). A range of religious affiliations were reported, although the sample primarily identified as Christian (60%), followed by Non-religious (26%). The most frequently reported relationship statuses were single (52%), in a relationship-not cohabitating (29%), and in a relationship-cohabitating (13%). Participants reported that their family-of-origin ranged in size from 0 to 30 individuals (M = 4.66, SD = 2.54) and nearly all participants did not yet have children (97%). The majority of participants reported

that they intended to have children (73%), but some reported that they did not intend to have children (5%) and others reported that they were uncertain about having children (19%).

Measures

Demographics. A demographic questionnaire was used to collect data on several variables (see Appendix A). Age, size of family-of-origin, and current number of children were measured as continuous variables. Race, gender, religious affiliation, sexual orientation, marital status, and intent to parent were measured as categorical variables.

Personality characteristics rating scale. Participants rated female vignette targets on 28 personality dimensions using a 7-point Likert-type scale (see Appendix B). Each dimension was presented in a bipolar fashion, or as pairs of contrasting characteristics anchoring each end of the dimension continuum. For example, if participants are providing target ratings for *kindness*, a response of '1' would indicate that the target is perceived to be kind. Conversely, a response of '7' would indicate that the target is perceived to be unkind. Twenty of these bipolar characteristics originated with the work of Lampman and Dowling-Guyer (1995), who used this scale to compare perceptions of involuntarily childless individuals, childfree individuals, and parents. An additional eight characteristics were later added to this scale by LaMastro (2001) in a study conducted to assess perceptions of and attributions for childlessness (both voluntary and involuntary). This scale has been used most recently by Koropeckyj-Cox et al. (2007) to assess perceptions of childless couples as they vary by race, gender, occupation, and the assumed reasons for childlessness. Several personality items were reversed scored (anxiety, inferiority, feeling sorry for oneself, loneliness, materialism, self-centeredness, and stressfulness) and higher scores on the scale indicate more negative evaluations of the female vignette target. For instance, higher scores for Interpersonal Warmth indicate *less* warmth, higher scores for

Agency/Drive indicate *less* agency, and higher scores for Negative Emotionality indicate more negative affect.

Using factor analysis with all 28 characteristics, LaMastro (2001) identified three personality factors that emerged for female targets rated with this scale. The first factor, *Interpersonal Warmth,* is comprised of the characteristics of caring, warmth, kindness, nurturing, sincerity, sensitivity, traditionalness, femininity, happiness, adjustment, and likability (Cronbach's alpha = .80, LaMastro, 2001). Koropeckyj-Cox et al. (2007) found a similar Interpersonal Warmth factor sharing most of these characteristics (Cronbach's alpha = .89). The second factor LaMastro (2001) found for females was *Agency/Drive*, comprised of success-orientation, ambition, career-orientation, determination, hardworking, successfulness, confidence, and competence (Cronbach's alpha = .81). Koropeckyj-Cox et al. (2007) also found the Agency/Drive factor with minor changes (Cronbach's alpha = .93). Finally, the *Negative Emotionality* factor for female targets is comprised of the characteristics of feeling sorry for oneself, inferiority, self-centeredness, loneliness, anxiety, materialism, and stressfulness (Cronbach's alpha = .57). Koropecky-Cox et al. (2007) also found this factor, although with fewer items (Cronbach's alpha = .59). According to LaMastro (2001), correlations between these factors range from -.35 to .26. For example, Interpersonal Warmth shares a moderate positive correlation with Agency/Drive (r = .26), but a moderate negative correlation with Negative Emotionality (r = -.35). Additionally, Agency/Drive and Negative Emotionality are weakly and negatively correlated with each other (r = -.08). Because previous factor analytic results suggest that Interpersonal Warmth, Agency/Drive, and Negative Emotionality form unique factors, each subscale served as a dependent variable in Hypotheses 1 and 2 of the current study.

Table 1.

Participant Demographics for Categorical Variables

Characteristic	*n*	(%)
Gender		
Female	256	(66.3)
Male	128	(33.2)
Other Gender	1	(0.3)
Transgender	1	(0.3)
Race/Ethnicity		
African American/Black	95	(24.6)
Asian/Pacific Islander	52	(13.5)
Caucasian/White	181	(46.9)
Hispanic/Latino(a)	20	(5.2)
Multiracial	26	(6.7)
Native American	0	(0.0)
Other Race	11	(2.8)
Decline to Answer	1	(0.3)
Religious Affiliation		
Buddhist	7	(1.8)
Christian	234	(60.6)
Hindu	8	(2.1)
Islamic	22	(5.7)
Jewish	1	(0.3)
Non-religious	103	(26.7)
Other Religion	11	(2.8)
Sexual Orientation		
Bisexual	10	(2.6)
Gay/Lesbian	8	(2.1)
Heterosexual	360	(93.3)
Other Sexual Orientation	7	(1.8)
Decline to Answer	1	(0.3)
Relationship Status		
In Relationship, Cohabitating	50	(13.0)
In Relationship, Not Cohabitating	114	(29.5)
Married/Partnered	9	(2.3)
Other Relationship Status	8	(2.1)
Separated/Divorced/Widowed	1	(0.3)
Single	203	(52.6)
Decline to Answer	1	(0.3)

(Table continues)

Table 1 (continued).

Participant Demographics for Categorical Variables

Characteristic	*n*	(%)
Parenting Intentions		
No	21	(5.4)
Uncertain	76	(19.7)
Yes	285	(73.8)
Decline to Answer	4	(1.0)

Table 2.

Participant Demographics for Continuous Variables

Characteristic	*f*	(%)
Age (grouped)		
18 – 25	365	(94.6)
26 – 33	14	(3.6)
34 – 41	6	(1.5)
42 – 49	0	(0.0)
50 – 57	1	(0.3)
Size of Family-of-Origin (grouped)		
0 – 4	222	(58.0)
5 – 9	154	(40.2)
10 – 14	3	(0.8)
15 – 19	1	(0.3)
20 – 24	1	(0.3)
25 – 29	0	(0.0)
30 – 34	2	(0.5)
Number of Children Currently		
0	376	(97.7)
1	5	(1.3)
2	1	(0.3)
3	1	(0.3)
5	1	(0.3)
9	1	(0.3)

The current study used LaMastro's (2001) factor structure to score these subscales for several reasons: (1) LaMastro's was the original scale-development study; (2) similar to the current study, LaMastro also manipulated parental status; and (3) LaMastro's factor structure produced higher estimates of internal consistency in the current study. The factor structure of LaMastro (2001) dictated that the Interpersonal Warmth subscale is comprised of the caring, warmth, likability, kindness, sensitivity, nurturing, sincerity, traditionalness, feminine-masculine, happiness, and well-adjusted items; the Agency/Drive subscale is comprised of the ambition, hard-working, determined, success-oriented, career-oriented, successful, confidence, and competence items; and the Negative Emotionality subscale is comprised of the anxiety, feeling sorry for oneself, loneliness, self-centeredness, materialism, stressfulness, and inferiority items. Estimates of internal consistency in the current study were for .84 for Interpersonal Warmth, .84 for Agency/Drive, and .67 for Negative Emotionality.

Stereotype content rating scale. A measure based on the Stereotype Content Model (SCM; Fiske et al., 2002) was used to assess the content of stereotypes evoked by women of varying parental statuses. Three versions were randomized to participants to assess stereotypes of social groups described as mothers, childless women, and childfree women (see Appendix C-E). This 12-item measure, which includes subscales of Competence and Warmth, required participants to rate these social groups on certain personality traits. To assess the content of cultural stereotypes and to reduce social desirability bias, participants were asked to report how they believe *others* rate the given social group on specific traits, rather than reporting their own personal beliefs. All items used the following format: "As viewed by society, how [insert trait] are [insert social group]?" Ratings were made on a 5-point Likert-type scale with response options ranging from 1 = *not at all* to 5 = *extremely*. Higher scores indicated more positive evaluations (i.e., higher Warmth and Competence) of the social group.

As stated earlier, this measure divides into the two subscales of Competence and Warmth. The Warmth subscale consists of six items assessing how sincere, good-natured, warm, trust-worthy, friendly, and well-intentioned members of a particular social group are perceived to be. Sample items include, "As viewed by society, how trustworthy are childfree women?" and, "As viewed by society, how sincere are mothers? The Competence subscale consists of an additional six items assessing how competent, confident, capable, efficient, skillful, and intelligent members of a particular social group are perceived to be. Sample items include, "As viewed by society, how capable are childless women?" and "As viewed by society, how intelligent are childfree women?" Psychometric data reported in previous studies provide evidence of reliability for these subscales, with Cronbach's alphas ranging from .74 (de Paula Couto & Koller, 2012) to .90 (Fiske et al., 2002) for the Warmth subscale, and .76 (de Paula Couto & Koller, 2012) to .94 (Fiske et al., 2002) for the Competence subscale. Estimates of internal consistency in the current study were .92 for Warmth and .84 for Competence.

Single Category IAT. The Implicit Association Test (IAT), originally designed by Greenwald, McGhee, and Schwartz (1998), is a computer software program designed to assess implicit attitudes toward specific target concepts. Of the implicit measures, the IAT is the most commonly used in psychological research (Oswald et al., 2013). The IAT assesses implicit attitudes by measuring the automatic association between a target-concept and an attribute, both of which are presented in a bipolar fashion (Greenwald et al., 1998; Rezaei, 2011; Schnabel et al., 2008). As a reaction-time-based assessment, the IAT measures the strength of an association by the time it takes for participants to classify stimuli into their appropriate categories (Dasgupta, 2010; Greenwald et al., 2003; Greenwald et al., 2009; Nosek et al., 2011; Rezaei, 2011; Steiger et al., 2011). Stimuli representing target-concept and attribute pairings with strong associations are classified faster and easier than those that are more weakly associated (Greenwald et al.,

1998; Hofmann & Schmitt, 2008; Schnabel et al., 2008; Steiger et al., 2011). Thus, the latency of classification is an indication of the strength of the association, with shorter latencies indicating stronger associations, and longer latencies indicating weaker associations (Nosek, 2007). When latencies are significantly faster for strongly associated target-attribute pairings over more weakly associated pairings, an implicit association effect is observed (Greenwald et al., 1998; Greenwald et al., 2003; Schnabel et al., 2008; Steiger et al., 2011).

Three concept-valence Single Category Implicit Association Tests (SC-IATs) were developed to assess implicit attitudes toward parents, childless individuals, and childfree individuals. A *concept-valence IAT* measures the strength of the association between concepts and attributes that evoke positive and negative valence. Rather than being a comparative measure, like the original IAT, the SC-IAT measures the strength of a participant's associations for one target concept without a comparison target. The SC-IATs used in the current study were modeled after Karpinski and Steinman's (2006) template for creating a computer-based SC-IAT in four blocks (see Appendix F for SC-IAT counterbalanced sequences). In each block, participants were asked to classify word stimuli (see Appendix G) into one of three categories (target concept, 'good,' or 'bad') placed on the left- and right-hand sides of the screen. Classification was achieved by pressing the 'e' and 'i' keys on a keyboard corresponding with the left-hand (e) and right-hand (i) sides of the screen. Each block contained congruent (parents-good, childfree-bad, childless-bad) or incongruent (parents-bad, childfree-good, childless-good) pairings of the target concept and attributes. In Block 1 (B1), the target concept (parent, childless, or childfree) was paired with 'good' on one side of the screen with 'bad' alone on the other side of the screen. Participants practiced classifying 24 stimuli into one of these three categories (target concept, good, or bad). In Block 2 (B2), the pairings of B1 were maintained and participants continued classifying an additional 72 stimuli. In Block 3 (B3), the target

concept was then paired with 'bad' on one side of the screen with good alone on the opposite side. Participants then practiced classifying 24 stimuli into one of these three categories. Block 4 (B4) maintained the same pairing configuration as B3, except now 72 stimuli were classified into one of the three categories. To prevent order effects, the presentation of congruent and incongruent target-attribute pairings was counterbalanced for half of the participants (see Appendix F). Every attempt was made to ensure that the SC-IAT categories used in this study were mutually exclusive and that stimuli could be classified into only one category.

It is important to note that all measures prior to the SC-IAT assessed attitudes toward *women* described as childless, childfree, and mothers. However, the SC-IATs will assess attitudes toward the broader concept of *individuals* described as childless, childfree, and parents (i.e., targets are described as neither male nor female). This choice was made for several reasons and certainly not meant to conflate mothering with parenting. First, because these are the first SC-IATs of their kind, the current study will assess attitudes toward broadly defined target-concepts described as childless, childfree, and parents. If significant results are found, future studies should assess attitudinal differences toward male and female targets in each of these parental statuses. Second, selecting SC-IAT stimuli that are specific to nonparental status is challenging because the most salient feature of the childless and childfree subgroups is the conspicuous *absence* of children. Distinguishing male and female targets within nonparental status targets using descriptive stimuli is even more challenging, as childless and childfree targets of both genders may be more similar than they are different. Thus, implicit measures and associated explicit measures (described below) will address attitudes toward the broadly defined target-concepts of childless, childfree, and parents.

As stated earlier, implicit measures, such as the IAT, increase a researcher's ability to assess stereotyping and negative attitudes in a manner that is less subject to social desirability

biases (Fazio & Olson, 2003; Greenwald & Banaji, 1995; Greenwald et al., 2009; Hofmann & Schmitt, 2008; Schnabel et al., 2008). The ability to do so is valuable because of the tendency of participants to respond to self-report measures, especially those assessing phenomena such as stereotypes or negative attitudes, in a socially desirable way (Fazio & Olson, 2003; Greenwald & Banaji, 1995; Greenwald et al., 2009; Hofmann & Schmitt, 2008; Schnabel et al., 2008). Although it has been demonstrated that IATs are fakable, they are much less susceptible to fakability than explicit measures using self-report (Gawronski, 2009; Schnabel et al., 2008; Steiger, Göritz, Hergovich, & Voracek, 2011). For instance, when participants are given specific instructions about how to fake the IAT and SC-IAT (e.g., speeding up or slowing down responses in certain blocks), they are able to influence their scores. It has been suggested that faking instructions may influence SC-IAT scores more so than scores on the original IAT (Steiger et al., 2011). However, when participants are asked to fake the IAT or SC-IAT without specific instructions about how to do so, scores are influenced little (Steiger et al., 2011). Moreover, attempts in initial validation studies at faking SC-IAT results were marked by high error rates, allowing researchers to easily detect and ameliorate self-presentation efforts (Karpinski & Steinman, 2006).

According to recent literature, IAT scores are a valid assessment of implicit attitudes (Gawronski, 2009; Hofmann et al., 2005; Nosek et al., 2007; Schnabel et al., 2008; Steiger et al., 2011). A review conducted by Schnabel et al. (2008) reports internal consistencies ranging from .70 to .90 across a variety of IAT studies. An additional meta-analysis of 61 studies by Hofmann et al. (2005) reports an average internal consistency and split-half reliability estimate of .79. Further studies report Cronbach's alphas for internal consistencies of .83 (Steiger et al., 2011), .80 (Hofmann & Schmitt, 2008), and .78 (Cunningham et al., 2001). Evidence suggests that the psychometric properties of the SC-IAT are acceptable and comparable to the original IAT

(Karpinski & Steinman, 2006). Authors of the SC-IAT report internal consistencies ranging from .73 to .85 using SC-IATs with four blocks and 72 critical trials (Karpinski & Steinman, 2006). Additional studies using the SC-IAT in a similar format report internal consistencies as high as .76 (Nevid & McClelland, 2010), .80 (Breen & Karpinski, 2013), and .81 (Dohle, Keller, & Siegrist, 2010).

Test-retest reliabilities for the IAT, however, are consistently reported in a less acceptable range (r = .51, Hofmann et al., 2005; r = .55, Hofmann & Schmitt, 2008; r = .56, Nosek et al., 2007; r = .52, Rezaei, 2011). Researchers have found that test-retest reliability is not influenced by the amount of time between assessments (Nosek et al., 2007; Rezaei, 2011; Schnabel et al., 2008), which typically ranges from 0 to 30 days across studies. Although a thorough explanation has not been proposed for this persistent finding (Hofmann & Schmitt, 2008), it has been suggested that low test-retest reliability may be due to measurement error in reaction-time assessments and not some property inherent to the IAT (Cunningham et al., 2001; Fazio & Olsen, 2003; Rezaei, 2011). Indeed, after using an approach that accounted for stability independent of measurement error, Cunningham et al. (2001) reported an increased test-retest reliability estimate of .68 for the IAT. One-week test-retest correlations of SC-IAT scores reported by Stieger, Göritz, and Burger, (2010) ranged from .24 to .33. Thus, it is suggested that the IAT, and variations thereof, are assessing both stable and mutable constructs (Schnabel et al., 2008).

Additionally, estimates of the convergent validity of the IAT vary widely. Some research reports that IAT outcomes strongly correlate with other measures of implicit attitudes, showing satisfactory construct validity (.53 to .77, Nosek et al., 2007). However, other research demonstrates low correlations (Fazio & Olsen, 2003; Schnabel et al., 2008). For example, Cunningham et al. (2001) reports correlations of .19 between the IAT and other implicit

measures. Similar to explanations of low test-retest reliabilities, inconsistent reports of IAT convergent validity have also been attributed to measurement error (Cunningham et al., 2001; Fazio & Olsen, 2003; Gawronski et al., 2007; Nosek et al., 2011; Rezaei, 2011). Once more using an approach that accounted for convergent validity independent of measurement error, Cunningham et al. (2001) report an average correlation of .63 between the IAT and two other implicit measures. Additionally, in a study of racist attitudes by Cunningham et al. (2001), confirmatory factor analysis suggested that a single underlying construct was being assessed across three implicit measures. Convergent validity has also been established between the SC-IAT and explicit measures of related constructs, such as consumer preference (Karpinski & Steinman, 2006), racial attitudes (Nevid & McClelland, 2010), and self-esteem (Karpinski & Steinman, 2006).

Finally, psychometric evidence suggests that implicit attitudes as measured by the IAT can be used to predict actual behaviors, demonstrating criterion validity. For example, in a meta-analysis of 122 studies with 184 samples by Greenwald et al. (2009), estimates of IAT predictive validity demonstrated an average effect size of .27 across an assortment of domains, including physical behaviors, evaluations, preferences, and physiological responses. After accounting for the typically low reliability estimates of the IAT, the estimated predictive validity effect size increased to a range of .36 to .41. As for predicting behavior in specific domains, the IAT correlated most strongly with explicit measures for political and consumer preferences. However, the estimated predictive validity of the IAT exceeded that of self-report measures when assessing sensitive topics, such as racial/ethnic attitudes and behaviors. Thus, in Greenwald et al.'s (2009) meta-analysis, predictive validity of the IAT was strongest for topics that were most susceptible to social desirability bias. Furthermore, SC-IAT scores have been shown to predict behavioral intent above and beyond original IAT scores and explicit measures

(Karpinski & Steinman, 2006). However, literature on the predictive validity of the IAT is inconsistent, with correlations between the IAT and behavioral measures reported from .12 to .15 in one meta-analysis (Oswald et al., 2013).

Explicit measure of attitudes toward childlessness. Blake's (1979) scale was used to directly assess attitudes toward various parental statuses in the current study (see Appendix H). Blake's original measure contains four items consisting of statements regarding the disadvantages of childlessness. Participants indicate their level of agreement with each statement on a 5-point Likert-type scale with response options of 1 (*strongly agree*), 2 (*agree*), 3 (*undecided*), 4 (*disagree*) and 5 (*strongly disagree*). Sample statements included, "Childless couples are more likely to lead empty lives than couples with children" and, "A woman is likely to feel unfulfilled unless she becomes a mother." Higher scores indicate more negative attitudes toward childlessness (i.e., more pronatalism).

By making minor modifications, two additional variations of Blake's (1979) scale were developed to directly assess attitudes toward childfree individuals (see Appendix I) and parents (see Appendix J) in the current study. Each statement still assessed attitudes toward the disadvantages of the relevant parental status. Participants also indicated their level of agreement with each statement on the same 5-point Likert-type scale described above. Sample statements for the childfree scale included, "Childfree couples are more likely to lead empty lives than couples with children" and, "A childfree woman is likely to feel unfulfilled unless she becomes a mother." Sample statements for the parent scale included, "Parents are more likely to lead empty lives than couples without children" and, "A woman is likely to feel unfulfilled if she becomes a mother." As with Blake's (1979) original scale of attitudes toward childlessness, higher scores indicate more pronatalism.

Although limited, psychometric data tentatively suggest that this scale is a reliable and valid measure of explicit attitudes toward childlessness. For instance, Blake (1979) reports inter-item correlations ranging from .27 to .39 for the four items assessing disadvantages of childlessness. Additionally, in a study using pronatalist attitudes to predict willingness to adopt a child, Bausch (2006) reports internal consistency of .72 for this scale. However, because few studies have used this measure since its initial development, further evidence about the psychometric properties (e.g., convergent/divergent validity, test-retest reliability) of this scale is not available. Nonetheless, Blake's (1979) scale is the closest approximation to a valid and reliable assessment of explicit attitudes toward childlessness. The current study observed an internal consistency estimate of .77 for this scale overall; however, analyses of internal consistency by parental status group revealed estimates of .82 for childless targets (Explicit-Childless), .79 for childfree targets (Explicit-Childfree), and .48 for parents (Explicit-Parent).

Evaluation Thermometer. A one-item Evaluation Thermometer (Haddock, Zanna, & Esses, 1993) was used as an additional measure of explicit attitudes toward parents, childless individuals, and childfree individuals (see Appendices K-M). This measure is a flexible one-item scale that can be used to assess explicit attitudes toward members of a target group. This 101-point scale assesses attitudes in degrees of 10, in which 0° indicates extremely unfavorable attitudes, 50° indicates neutrality, and 100° indicates extremely favorable attitudes. Rather than asking participants to produce ratings along a specific trait dimension, Haddock et al.'s (1993) thermometer is a purely evaluative assessment of explicit attitudes toward the target group. Again, although targets are broadly defined as childless, childfree, and mothers, this is not intended to conflate mothering with parenting. Non-gendered targets were selected for this and Blake's (1979) 4-item explicit measure to facilitate comparisons between implicit and explicit attitudes toward targets.

The Evaluation Thermometer has been used to assess a wide variety of attitudes, including those based on sexual orientation (Haddock et al., 1993), race and ethnicity (Blair, Judd, Havranek, & Steiner, 2010), health status (Cranney et al., 2001), and self (Karpinski, 2004). The 2-week test-retest reliability of the Evaluation Thermometer has been estimated at .77 (Haddock et al., 1993) and .83 (Cranney et al., 2001). Evidence of the convergent validity of this one-item scale has also been demonstrated, with correlations of .69 (Karpinski, 2004) and.70 (Haddock et al., 1993) being reported between the Evaluation Thermometer and semantic differential scales.

Procedure

Before commencing with the current study, exempt approval was obtained from VCU's Institutional Review Board (IRB). All data were then collected anonymously online. Before contributing to the study, participants were apprised of its purpose and their option to withdraw at any time without penalty. Each then participant provided informed consent via an electronic signature.

The study was completed in four stages. During the first stage, participants were shown a written vignette describing a male-female couple. According to Atzmüller and Steiner (2010), a vignette is a "…short, carefully constructed description of a person, object, or situation, representing a systematic combination of characteristics" (p. 128). Written vignettes are classically employed in the analogue research designs often seen in social science research. Due to the inability to directly manipulate certain variables, analogue designs attempt to study psychosocial phenomena by approximating real-world circumstances using fictitious scenarios (Cook & Rumrill, 2005). These designs afford the researcher a degree of experimental control over the variables of interest that could otherwise not be manipulated ethically (Cook & Rumrill, 2005). In addition, because analogue designs allow for the random assignment of participants to

groups, a researcher is able to control for extraneous variables that might otherwise influence results (Atzmüller & Steiner, 2010; Cook & Rumrill, 2005). Because of these advantages, analogue designs tend to have high internal validity (Cook & Rumrill, 2005).

By varying the factors that are assumed to be most important to social judgments, vignettes are thought to elicit realistic reactions from participants (Alexander & Becker, 1978). According to Alexander and Becker (1978), these reactions may be less subject to the self-report bias often observed in direct or explicit questionnaires assessing attitudes. In the current study, manipulations were made of race (Black, Asian, White, and Hispanic) and parental status (two children, childless, or childfree) for a total of 12 possible vignettes. The format of the written vignette followed some of the criteria established in Polit's (1978) work on attitudes toward childlessness. To convey that the couple is approaching the end of the normative window for childbearing (and therefore unlikely to change their parental status), they were described as in their mid-40s (Abma & Martinez, 2006). Additionally, the female target was described as having a "successful and rewarding career," suggesting that economic restrictions were not a factor in the couple's current family size. Finally, the length of marriage, explicitly stated common interests, and engagement with family implied that the couple is stable; thus, relationship instability was not a factor in their reproductive decisions. The presentation of these 12 vignette combinations were randomized to participants. Before reading the vignettes, participants were warned that they would be given a memory task after the vignette and should therefore read the scenario very carefully. Following review of the written vignette, participants rated the female target using the 28-characteristic personality scale previously described (LaMastro, 2001; Lampman & Dowling-Guyer, 1995). The following is a sample of the vignettes (modeled after Vinson et al., 2010) that were given to participants (see Appendix N for

all vignettes) with manipulated phrases italicized for emphasis (participants did not receive vignettes with italics):

1) Angela and Michael, a *Black* couple, are both 45 years of age. They have been married 20 years and *are childfree*. Angela has a successful and rewarding career, is involved with her extended family, and shares hobbies and interests with her husband, Michael.

Before proceeding to the second stage of the study, participants completed a manipulation check, framed as a memory task, to confirm that parental status and race were salient features of the female vignette character. Following the manipulation check, participants proceeded to the second stage of the study. During this stage, participants were asked to rate one of three social groups (i.e., mothers, childless women, or childfree women) on Competency and Warmth using the SCM scales previously described (Fiske et al., 2002).

Following the completion of the SCM scales, participants proceeded to the third stage of the study. This stage consisted of completing one of three randomly assigned SC-IATs with varying broadly defined target-concepts (parents, childless, or childfree). Before starting the SC-IAT, participants were reminded to minimize distractions, and to work as quickly and accurately as possible. At the conclusion of the SC-IAT, participants entered the fourth and final stage of the study in which they completed the demographic questionnaire, one of three (parents, childless, or childfree) 4-item explicit measure of attitudes, and one of three (parents, childless, or childfree) evaluation thermometers. Including initial instructions and debriefing, completion of the entire study took approximately 25-30 minutes.

Results

Hypotheses #1 and 2

Hypothesis #1 broadly stated that perceptions will vary for female vignette characters described as mothers, childless, and childfree. Hypothesis #1a stated that women described as childless and childfree will be rated lower on Interpersonal Warmth and higher on Negative Emotionality than mothers. Hypothesis #1b further predicted that women described as childfree will be rated lower on Interpersonal Warmth and higher on Negative Emotionality than women described as childless. Hypothesis #2 stated that there would be an interaction between race and parental status of female vignette characters, such that women of racial minority groups described as childless and childfree would be rated lower on Interpersonal Warmth and higher on Negative Emotionality than White women described as childless and childfree. Because occupational status was held constant across conditions, it was predicted that women in all groups of the independent variables would be rated the same for Agency/Drive. As stated previously, higher scores on the Interpersonal Warmth, Agency/Drive, and Negative Emotionality scales indicate more negative evaluations of the female vignette target. Thus, higher scores for Interpersonal Warmth indicate *less* warmth, higher scores for Agency/Drive indicate *less* agency, and higher scores for Negative Emotionality indicate more negative affect.

Preliminary analyses. Figure 1 presents the process of excluding cases from the raw data for each set of analyses. Of the 463 participants who consented to participate and began the study, 35 could not complete the study due to an unforeseen computer "freezing problem" during

collection of demographic information. This problem was likely due to incompatibility between operating systems, web browsers, and the host server. However, despite numerous attempts by the study's web developer to isolate the cause, the reason for this "freezing problem" was never discovered. Because the study was not designed to be accessed more than once per participant, incomplete response sets from participants who experienced this freezing problem were not included in final analyses. Additionally, 42 participants who withdrew before completing the study (also resulting in incomplete response sets) were excluded from final analyses. Finally, 109 participants who failed the manipulation check by inaccurately identifying either the manipulated race or parental status of the female vignette target were also excluded from analyses regarding Hypotheses #1 and 2 (patterns of manipulation check failure are discussed later). Thus, a total of 277 participants were included in the analyses regarding Hypotheses #1 and 2.

To assess Hypotheses 1 and 2, three scales of Interpersonal Warmth, Agency/Drive, and Negative Emotionality were derived from the personality characteristic rating scale (LaMastro, 2001). Each scale served as a dependent variable in analyses assessing Hypotheses #1 and 2. The dependent variables of Interpersonal Warmth, Agency/Drive, and Negative Emotionality were calculated by the summing the scores for all items in each scale, with participants missing 20% or more of their data excluded from analyses. For participants with missing data who were included in final analyses, the mean of their nonmissing responses was used to extrapolate their missing responses. A total of 11 (3.97%) participants were missing data on these scales, but only one (.3%) was excluded from analyses regarding Hypothesis #1 and 2 for more than 20% missing data. A total of 17 (.24%) item responses were missing for the variables of Interpersonal Warmth, Agency/Drive, and Negative Emotionality.

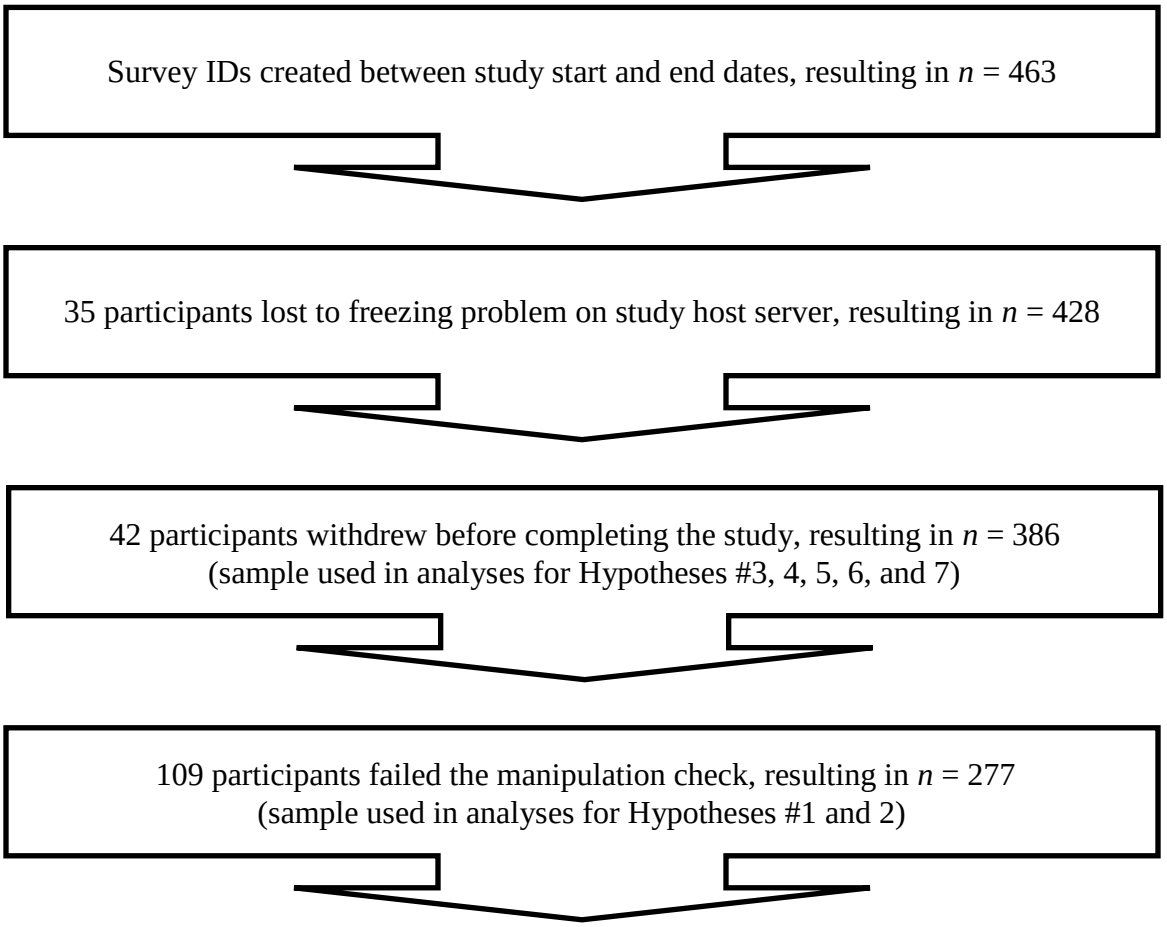

Figure 1. Process for excluding cases from raw data.

To test for successful randomization of participants to all 12 combinations of vignette target race (Black, White, Asian, Hispanic) and parental status (Childless, Childfree, Mother), chi-square tests of independence were conducted to assess categorical demographic variables and one-way ANOVAs were conducted to assess continuous demographic variables. There were no significant differences between vignette conditions on any of the demographic variables. Thus, results suggest that all demographic variables were equally randomized across the 12 combinations of the independent variables. Before proceeding with analyses, the variables of Interpersonal Warmth, Agency/Drive, and Negative Emotionality were also tested for

assumptions of ANOVA. There were no outliers for these variables, as no cases had standardized residuals greater than three standard deviations of the mean (i.e., ±3.29, Tabachnick & Fidell, 1996). For Interpersonal Warmth, all 12 groups comprised of combinations of vignette character race (i.e., Black, White, Asian, and Hispanic) and parental status (i.e., childless, childfree, and mother) met normality assumptions as assessed by nonsignificant Shapiro-Wilk tests ($p > .05$), except the Black-Mother group ($p = .01$). The distribution for Agency/Drive violated assumptions of normality for all groups, as assessed by significant Shapiro-Wilk tests ($p < .05$). For Negative Emotionality, all groups met assumptions of normality as assessed by nonsignificant Shapiro-Wilk tests ($p > .05$), except the Black-Childfree group ($p = .016$). All three dependent variables met the assumption of homogeneity of error variances, as assessed by nonsignificant Levene's Tests for Equality of Error Variances ($p > .05$). To attempt to meet assumptions of normality, transformations were conducted on nonnormal variables (Tabachnick & Fidell, 2007). Interpersonal Warmth was transformed using a square root transformation, permitting the Black-Mother group to become approximately normal (Shapiro-Wilk, $p = .048$). Negative Emotionality was also transformed using a square root transformation, but this worsened normality for the Black-Childfree group (Shapiro-Wilk, $p = .005$); thus, data for Negative Emotionality were assessed in their original form. Agency/Drive was transformed using a log10 transformation, which improved normality for five groups (Shapiro-Wilk, $p > .05$), but still did not meet assumptions of normality for seven groups (Shapiro-Wilk, $p < .05$). However, research suggests that ANOVA is fairly robust to violations of normality (Harwell, Rubinstein, Hayes, & Olds, 1992), especially with a large number of degrees of freedom for error (Tabachnick & Fidell, 2007). Therefore, ANOVA was used to assess hypotheses despite some violations of normality.

Table 3

Sample Sizes, Means, Standard Deviations, and Ranges of Scales

	Total Sample				
	n	*M*	*SD*	Sample Range	Possible Range
Personality Characteristic Rating Scale					
Interpersonal Warmth	276	27.51	9.30	11.00- 56.10	11.00-77.00
Agency/Drive	277	13.83	6.32	8.00-34.00	8.00-56.00
Negative Emotionality	277	21.42	6.25	7.00-40.00	7.00-49.00
SCM Scale					
Warmth	381	3.38	.96	1.00-5.00	1.00-5.00
Competence	385	3.76	.75	1.50-5.00	1.00-5.00
SC-IAT					
Childless	123	-.01	.31	-.78-.73	-2.00-2.00
Childfree	117	.08	.34	-.76-.77	-2.00-2.00
Parent	116	.13	.34	-.61-1.07	-2.00-2.00
Explicit Attitudes Toward Childlessness					
Childless	135	11.79	3.55	4.00-20.00	4.00-20.00
Childfree	125	11.93	3.72	4.00-20.00	4.00-20.00
Parent	125	14.46	2.5	9.00-20.00	4.00-20.00
Evaluation Thermometer					
Childless	127	55.89	18.92	10.00-100.00	0.00-100.00
Childfree	121	54.68	21.79	0.00-100.00	0.00-100.00
Parent	121	81.24	20.74	5.00-100.00	0.00-100.00

Note. SCM = Stereotype Content Model; SC-IAT = Single Category Implicit Association Test.

Descriptive Statistics. Descriptive statistics for the variables of Interpersonal Warmth, Agency/Drive, and Negative Emotionality collapsed across vignette target conditions are presented in Table 3. Small-to-large correlations were observed between these scales (Table 4).

Means for the sample of participants who passed the manipulation check (n = 277) were 27.51 (SD = 9.30) for Interpersonal Warmth, 13.83 (SD = 6.32) for Agency/Drive, and 21.42 (SD = 6.25) for Negative Emotionality. Again, it is important to note that higher values on these scales indicate more negative evaluations of the target (i.e., *less* Interpersonal Warmth, *more* Negative Emotionality, and *less* Agency/Drive). The descriptive statistics of the current study can be compared to those reported by LaMastro (2001) for female targets, which were 23.36 (SD = 8.55) for Interpersonal Warmth, 18.41 (SD = 9.21) for Agency/Drive, and 30.73 (SD = 6.22) for Negative Emotionality. As can be seen from this comparison, participants in the current study rated targets more favorably for Agency/Drive and Negative Emotionality, but less favorably for Interpersonal Warmth, than participants in LaMastro's (2001) study.

Table 4

Correlations Among Personality Characteristic Rating Subscales

Variable	1	2	3
1. Interpersonal Warmth	--		
2. Agency/Drive	.46**	--	
3. Negative Emotionality	.46**	.28**	--

*p < .05. **p < .01.

Primary Analyses. Three ANOVAs were conducted to assess for the main effects of parental status and race, and the combined influence of parental status and race on each of the dependent variables (Interpersonal Warmth, Agency/Drive, and Negative Emotionality). The first ANOVA was conducted to assess hypotheses involving Interpersonal Warmth, in which vignette target parental status (mother of two children, childless, and childfree) and race (Black, Asian, Hispanic, and White) were entered as fixed factors, and Interpersonal Warmth served as

the dependent variable. The ANOVA (N = 276) revealed a significant main effect of parental status for Interpersonal Warmth, $F(2, 264) = 15.02$, $MSE = .73$, $p < .001$, $\omega^2 = .09$. Post-hoc analyses were conducted with a Bonferroni adjustment to further examine these differences, revealing that targets described as a mother of two children (N = 117, M = 4.84, SD = .82) were rated significantly more positively on Interpersonal Warmth (i.e., lower scores) than both childless (N = 99, M = 5.42, SD = .89), $p < .001$, and childfree targets (N = 60, M = 5.39, SD = .85), $p < .001$. There was no difference in Interpersonal Warmth scores for childless and childfree targets, $p = 1.00$. There was not a significant main effect for racial group, $F(3, 264) = .36$, $MSE = .73$, $p = .78$, $\omega^2 = -.01$ nor was there a significant interaction between parental status and racial group, $F(6, 264) = .74$, $MSE = .73$, $p = .62$, $\omega^2 = -.01$. Table 5 presents means for Interpersonal Warmth in each vignette condition.

A second ANOVA was conducted to assess hypotheses involving Agency/Drive, in which vignette target parental status and race were entered as fixed factors and Agency/Drive served as the dependent variable. ANOVA (N = 277) results revealed that there was no significant main effect of parental status for Agency/Drive, $F(2, 265) = .39$, $MSE = .03$, $p = .68$, $\omega^2 = -.00$. There also was not a significant main effect for racial group, $F(3, 265) = .88$, $MSE = .03$, $p = .45$, $\omega^2 = -.00$. Finally, there was not a significant interaction between parental status and racial group, $F(6, 265) = .93$, $MSE = .03$, $p = .48$, $\omega^2 = -.00$. Table 5 presents means for Agency/Drive in each vignette condition.

A final ANOVA was conducted to assess hypotheses involving Negative Emotionality, in which vignette target parental status and race were entered as fixed factors and Negative Emotionality served as the dependent variable. The ANOVA (N = 277) revealed a significant main effect of parental status for Negative Emotionality, $F(2, 265) = 4.52$, $MSE = 38.36$, $p = .01$, $\omega^2 = .02$. Post-hoc analyses were conducted with a Bonferroni adjustment to further examine

these differences, revealing that targets described as a mother of two children (N = 117, M = 20.17, SD = 6.26) were rated significantly more positively on Negative Emotionality (i.e., lower scores) than childless targets (N = 99, M = 22.56, SD = 5.94), p = .02, but not childfree targets (N = 61, M = 21.96, SD = 6.38), p = .20. There was no difference in Negative Emotionality scores for childless and childfree targets, p = 1.00. There was not a significant main effect for racial group, $F(3, 265) = .53$, $MSE = 38.36$, $p = .66$, $\omega^2 = -.0$, nor was there a significant interaction between parental status and racial group, $F(6, 265) = .92$, $MSE = 38.36$, $p = .48$, $\omega^2 = -.00$. Table 5 presents means for Negative Emotionality in each vignette condition.

Table 5

Vignette Condition Means and Variability for Interpersonal Warmth, Agency/Drive, and Negative Emotionality

	Interpersonal Warmth			Agency/Drive			Negative Emotionality		
	n	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*
Race									
Black	75	27.84	8.78	75	14.12	6.26	75	21.24	5.95
Asian	70	27.12	10.30	71	13.65	6.34	71	21.30	6.32
White	66	28.45	9.58	66	14.72	7.22	66	20.95	6.12
Hispanic	65	26.58	8.55	65	12.78	5.26	65	22.22	6.69
Parental Status									
Childless	99	30.13	9.42	99	13.63	5.94	99	22.56	5.94
Childfree	60	29.80	9.09	61	14.63	7.15	61	21.96	6.38
Mother	117	24.11	8.25	117	13.83	6.32	117	20.17	6.26

Note. Means and standard deviations reflect untransformed variables.

Further analyses were conducted to assess for patterns regarding manipulation check failure. A chi-square test of independence was conducted to assess the association between vignette target race (Black, Asian, White, and Hispanic) and manipulation check failure (yes and no). All expected cell frequencies were greater than five. There was not a significant association between vignette target race and manipulation check failure, χ^2 (3) = 5.94, p = .12. The effect size for this finding was weak, Cramer's V = .12. The number of participants who failed the manipulation check was approximately equal across vignette target racial conditions. A second chi-square test of independence was conducted to assess the association between vignette target parental status (childless, childfree, and parent of two children) and manipulation check failure (yes and no). All expected cell frequencies were again greater than five. There was a significant association between vignette target parental status and manipulation check failure, χ^2 (2) = 49.13, p < .001. The effect size for this finding was moderate, Cramer's V = .36. Approximately 50.8% of participants in the childfree vignette condition failed the manipulation check, in contrast with 22.7% in the childless condition and 12.7% in the parent condition. To further assess if there were differences in manipulation check failure between the childless and childfree vignette conditions, a third chi-square test of independence was conducted. There was also a significant association between vignette target nonparental status (childless and childfree) and manipulation check failure, χ^2 (1) = 21.53, p < .001. The effect size for this finding was moderate, Cramer's V = .29. These results mirrored those found in the second chi-square; failing the manipulation check was more likely in the childfree condition (50.8%) than the childless condition (22.7%).

It is of theoretical interest to determine if participants who received the nonparental status vignettes and who failed the manipulation check were more likely to have failed *solely* because they selected childless instead of childfree (and visa versa) as the parental status of the vignette

couple. To isolate this segment of the sample, the following participants were included in analysis: (1) those who had received a nonparental status vignette (childless and childfree) *and* (2) had passed the manipulation check for target race but failed it for parental status. Within this subsample (N = 59), the association between nonparental status condition and parental status manipulation check response was significant, χ^2 (2) = 45.19, $p < .001$. The effect size for this finding was very strong, Cramer's V = .88. Of participants who received the childless vignette but failed the parental status manipulation check, 64.3% reported the parental status of the target as childfree, while only 35.7% reported parental status as parents of two children. Similarly, of participants who received the childfree vignette condition but failed the parental status manipulation check, 88.9% reported the parental status of the target as childless, while only 11.1% reported parental status as parents of two children. Thus, most participants in the nonparental status conditions appeared to have noticed the parental status manipulation, but may have failed the manipulation check because the distinction between the terms 'childless' and 'childfree' was not meaningful.

Hypothesis #3

Hypothesis #3 stated that stereotypes will vary by the label chosen to describe women, with mothers, childless women, and childfree women being differentiated by stereotypes according to the Stereotype Content Model (SCM). This hypothesis further predicted that mothers and childless women will be rated high in Warmth, but low in Competence, demonstrating ambivalent, paternalistic stereotypes. It additionally predicted that childfree women will be rated low in Warmth, but high in Competence, demonstrating an ambivalent, envious stereotype.

Preliminary Analyses. The dependent variables of Competence and Warmth were created by calculating the mean of the six items devoted to each scale, with participants missing

20% or more of their data excluded from analyses. For participants with missing data who were included in final analyses of SCM scales, the mean of their nonmissing responses was used to extrapolate their missing responses. A total of six (1.55%) participants were missing data on these scales, but only one (.3%) was excluded from analyses of SCM scales for greater than 20% missing data. A total of nine (.19%) item responses were missing for the variables of Competence and Warmth.

To test for successful randomization of participants to all three parental status groups (childless, childfree, mothers), chi-square tests of independence were conducted to assess categorical demographic variables and one-way ANOVAs were conducted to assess continuous demographic variables. There were no significant differences between parental status conditions on any of the demographic variables. Thus, results suggest that all demographic variables were equally randomized across the three parental status conditions.

The variables of Competence and Warmth were tested for normality using skewness and kurtosis values within each parental status group. The data were normally distributed for the Competence variable, with skewness values of -.28 (*SE* = .22) for the mothers condition, .02 (*SE* = .22) for the childless condition, and -.27 (*SE* = .21) for the childfree condition; and kurtosis values of -.64 (*SE* = .43) for the mothers condition, -.22 (*SE* = .43) for the childless condition, and -.37 (*SE* = .41) for the childfree condition. These data were also normally distributed for the Warmth variable, with skewness values of -.68 (*SE* = .22) for the mothers condition, .13 (*SE* = .22) for the childless condition, and .61 (*SE* = .21) for the childfree condition; and kurtosis values of -.26 (*SE* = .43) for the mothers condition, .35 (*SE* = .43) for the childless condition, and .44 (*SE* = .42) for the childfree condition. Inspection of boxplots revealed that there were no univariate outliers for the Warmth and Competence variables in the Mothers and Childfree groups, but that for the Childless group there were three univariate outliers for Warmth and one

univariate outlier for Competence. Inspection of the response sets for all four univariate outliers indicated extreme response bias, as these participants endorsed exclusively either "not at all" (1) or "extremely" (5) for all SCM items. These extreme response biases produced participant means for Competence and Warmth that were at least two standard deviations away from the means for each of these variables; thus, participants with these outliers were removed from further analysis. Before conducting all analyses, a Bonferroni correction was made to account for increased Type I error rate associated with multiple tests involving each SCM condition (i.e., mothers, childless, and childfree). The standard .05 alpha level was adjusted for three analyses per SCM condition (two ANOVAs and one paired samples *t* test), resulting in an adjusted alpha level of .017 for determining statistical significance.

Descriptive Statistics. Descriptive statistics for the variables of Competence and Warmth collapsed across parental status targets are presented in Table 3. A large correlation was observed between these two scales, $r = .44$, $p < .001$. For targets described as mothers, means were 3.94 (*SD* =.72) for Competence and 4.34 (*SD* = .57) for Warmth; for targets described as childless, means were 3.62 (*SD* = .74) for Competence and 2.87 (*SD* = .72) for Warmth; for targets described as childfree, means were 3.73 (*SD* = .77) for Competence and 2.97 (*SD* = .77) for Warmth. The descriptive statistics of the current study may be compared to other studies that assessed similar targets using a different number of items. For example, Cuddy and Glick (2004) report mean Competence ratings of 5.03 for female targets described as mothers and 5.44 for female targets described as childless, and mean Warmth ratings of 5.39 for mothers and 4.89 for childless targets (standard deviations were not reported). Descriptive statistics of the current study can also be compared with other studies that used the same item structure, regardless of target. For example, across a variety of stereotype clusters and target populations, Fiske et al. (2002) report means for Competence ranging from 2.29 to 4.04, and means for Warmth ranging

from 2.66 to 3.62 (standard deviations were not reported). For elderly targets, de Paula Couto and Koller, (2012) report means of 2.77 (*SD* = .62) for Competence and 3.81 (*SD* = .54) for Warmth.

Primary Analyses. A one-way ANOVA was conducted to assess Hypothesis #3 for the Competence variable. The Competence variable did not violate the assumption of homogeneity of variances according to Levene's Test of Equality of Variances (p = .64). The overall one-way ANOVA (N = 385) revealed a significant difference between SCM parental status groups for Competence, $F(2, 382) = 6.08$, MSE = .56, p = .003, ω^2 = .03. Post hoc analyses were conducted with a Bonferroni adjustment to further examine differences between groups, revealing that mothers (N = 124, M = 3.94, SD = .72) were rated significantly more competent than childless targets (N = 126, M = 3.62, SD = .74), p = .002, but not childfree targets (N = 135, M = 3.73, SD = .77), p = 08. Childless and childfree targets were not significantly different on Competence, p = 62. Table 6 presents means for Competence within each parental status group.

Table 6

SCM Condition Means and Variability for Warmth and Competence

	Warmth			Competence		
	n	*M*	*SD*	*n*	*M*	*SD*
Parental Status						
Childless	123	2.87	.72	126	3.62	.74
Childfree	134	2.97	.77	135	3.73	.77
Mothers	124	4.34	.57	124	3.94	.72

Note. SCM = Stereotype Content Model. Means and standard deviations reflect unstandardized variables.

A second ANOVA was conducted to assess Hypothesis #3 for the Warmth variable. The Warmth variable did not violate the assumptions of homogeneity of error variances across parental status groups (p =.07). The overall ANOVA (N = 381) revealed a significant difference between SCM parental status groups for Warmth, $F(2, 378) = 176.17$, MSE = .48, $p < .001$, ω^2 = .48. Post-hoc analyses were conducted with a Bonferroni adjustment to further examine these differences, revealing that mothers (N = 124, M = 4.34, SD = .57) were rated significantly more warm than both childless (N = 123, M = 2.87, SD = .72), $p < .001$, and childfree targets (N = 134, M = 2.97, SD = .77) , $p < .001$. There was no difference in Warmth scores for childless and childfree targets, p = .76. Table 6 presents means for Warmth within each parental status group..

Paired sample t tests were conducted to further analyze the differences within SCM parental status groups for Competence and Warmth, and to assess for the ambivalent stereotypes predicted by Hypothesis #3a-b. Before proceeding with analyses, the variables of Competence and Warmth were checked for and met assumptions of normality and univariate outliers. The data were normally distributed for the Competence variable, with skewness values of -.28 (SE = .22) for the mothers condition, .02 (SE = .22) for the childless condition, and -.27 (SE = .21) for the childfree condition; and kurtosis values of -.64 (SE = .43) for the mothers condition, -.22 (SE = .43) for the childless condition, and -.37 (SE = .41) for the childfree condition. These data were also normally distributed for the Warmth variable, with skewness values of -.68 (SE = .22) for the mothers condition, .13 (SE = .22) for the childless condition, and .61 (SE = .21) for the childfree condition; and kurtosis values of -.26 (SE = .43) for the mothers condition, .35 (SE = .43) for the childless condition, and .44 (SE = .42) for the childfree condition. Checks for univariate outliers by boxplot inspection indicated that the mean difference between Competence and Warmth contained two univariate outliers for the childless group, three univariate outliers for the mothers group, but no univariate outliers for the childfree group. Inspection of the response

sets for all five univariate outliers did not indicate extreme response bias; thus, these scores may represent genuinely atypical responses. Because removal of the outliers did not affect final results, the five univariate outliers were retained in further analyses. Finally, the Competence and Warmth variables were standardized to permit their comparison in the paired samples *t* tests.

Results of the first paired samples *t* test (N = 124) revealed a significant difference between Competence and Warmth for mothers, $t(123) = -10.71$, $SEM = .07$, $p < .001$, $d = .93$. Mothers were rated significantly more warm ($M = 4.34$, $SD = .57$) than competent ($M = 3.94$, $SD = .72$), resulting in an ambivalent stereotype. The second paired sample *t* test (N = 127) also revealed a significant difference between Competence and Warmth for childless targets, $t(126) = 3.06$, $SEM = .09$, $p = .003$, $d = .29$. Thus, the childless subgroup was also ambivalently stereotyped, such that childless targets were rated significantly more competent ($M = 3.60$, $SD = .77$) than warm ($M = 2.94$, $SD = .80$). The third and final paired samples *t* test (N = 134) also demonstrated a significant difference between Competence and Warmth for childfree targets, $t(133) = 5.08$, $SEM = .08$, $p < .001$, $d = .45$. Similar to the ambivalent stereotyping of the childless subgroup, the childfree subgroup was also rated significantly more competent ($M = 3.73$, $SD = .77$) than warm ($M = 2.97$, $SD = .77$).

Hypotheses #4, 5, and 6

Whereas Hypotheses #1, 2, and 3 assessed attitudes toward *women* described as childless, childfree, and mothers, Hypotheses #4, 5, 6, and 7 assess attitudes toward non-gendered targets broadly defined as childless, childfree, and parents. Hypotheses #4a-c stated that an implicit association effect, as measured by implicit attitudes on the SC-IAT, would be observed for each of three parental statuses (parents, childless, childfree). Hypothesis #4a further predicted that automatic implicit associations would be stronger when the target concept parent is paired with a positive attribute (e.g., good) than when parent is paired with a negative attributes (e.g., bad).

Hypothesis #4b predicted that automatic implicit associations would be stronger when the target concept childless is paired with a negative attribute than when childless is paired with a positive attribute. Finally, Hypothesis #4c predicted that automatic implicit associations would be stronger when the target concept childfree is paired with a negative attribute than when childfree is paired with a positive attribute.

Preliminary Analyses. To obtain SC-IAT *D*-scores, the improved scoring algorithm suggested by Greenwald et al. (2003) and modified by Karpinski and Steinman (2006) was used to score the SC-IAT. SC-IAT *D*-scores were calculated such that higher scores indicated a preference for the congruent target-attribute pairing (e.g., parent-good, childless-bad, childfree-bad). The current study used the following steps to calculate SC-IAT *D*-scores: (1) discard the 24 practice trials from B1 and B3 (2) remove from analyses all participants with a 20% error rate or larger; (3) remove all trials with non-responses, and latencies less than 350 ms and greater than 10,000 ms; (4) calculate the mean of correctly-keyed latencies for B2 and B4 separately; (5) replace each incorrectly-keyed latency with the mean of its respective block, plus an error penalty of 400 ms; (6) recalculate the means for B2 and B4 separately, including correct and penalized trials; (7) calculate the standard deviation for all correct latencies across B2 and B4; (8) calculate the difference between the means of B2 and B4; and (9) divide this mean difference by the pooled standard deviation of B2 and B4 to produce a *D*-score. SC-IAT *D*-scores in the current study were calculated such that positive *D*-scores indicated a positive implicit association for the target concept and negative *D*-scores indicated a negative implicit association.

The differences between Karpinski and Steinman's (2006) and Greenwald et al.'s (2003) algorithms, while minor, are worth noting. For example, Karpinski and Steinman (2006) recommend excluding all latencies less than 350 ms instead of excluding participants with response latencies less than 300 ms for 10% or more of their trials, as recommended by

Greenwald et al. (2003). Karpinski and Steinman's (2006) method also includes replacing error latencies with a penalty of the block mean plus 400 ms instead of the 600 ms suggested by Greenwald et al. (2003). Finally, although Greenwald et al. (2003) would retain all participants regardless of error rate, Karpinski and Steinman (2006) recommend excluding participants with a 20% or greater error rate to reduce the influence of social desirability bias. Despite not being recommended by Karpinski and Steinman (2006), responses latencies greater than 10,000 ms (i.e., responses made in more than 10 seconds) were eliminated in the current study, as recommended by Greenwald et al. (2003). Research suggests that the use of this improved scoring algorithm produces higher implicit-explicit correlations, thereby demonstrating increased construct validity with a smaller amount of contamination by extraneous variables (Greenwald et al., 2003).

D-scores range from -2.0 to 2.0 in which 0 represents no difference in the latency of responses between B2 and B4. The closer a *D*-score is to ±2.0, the stronger the preference for that target-attribute pairing. According to Greenwald et al. (1998), the implicit association effect occurs when there is a significant difference between the mean latencies of the congruently-paired and incongruent-paired blocks. According to the SC-IAT hypotheses of the current study, it was expected that when target-attribute pairings were incongruent (i.e., parents-bad, childless-good, childfree-good), participants categorized stimuli significantly slower than when target-attribute pairings were congruent (i.e., parents-good, childless-bad, childfree-bad).

To test for successful randomization of participants to all three parental status groups (childless, childfree, parent), chi-square tests of independence were conducted to assess categorical demographic variables and one-way ANOVAs were conducted to assess continuous demographic variables. There were no significant differences between parental status conditions on any of the demographic variables. Thus, results suggest that all demographic variables were

equally randomized across the three parental status conditions. Before conducting primary analyses, SC-IAT *D*-scores were checked to ensure that they met assumptions of normality and univariate outliers. Inspection of boxplots revealed one univariate outlier for SC-IAT *D*-scores. However, because the *z* score of the outlier was within three standard deviations of the mean (i.e., ±3.29), and skewness and kurtosis values were within an acceptable range, the outlier was retained in the dataset (Tabachnick & Fidell, 1996). Before conducting all analyses, a Bonferroni correction was made to account for increased Type I error rate associated with multiple tests involving each SC-IAT condition (i.e., parents, childless, and childfree). For the parents, childless, and childfree conditions, the standard .05 alpha level was adjusted for four analyses per condition (1 one-sample *t* test, 1 one-way ANOVA, and 2 correlations), resulting in an adjusted alpha level of .013 for determining statistical significance.

Descriptive Statistics. Descriptive statistics for the SC-IATs are presented in Table 3. SC-IAT means in the current study were -.01 (*SD* = .31) for the Childless SC-IAT, .08 (*SD* = .34) for the Childfree SC-IAT, and .13 (*SD* = .34) for the Parent SC-IAT. The SC-IAT means and standard deviations of the current study were comparable to studies using the SC-IAT to assess a variety of target concepts. For instance, Karpinski and Steinman (2006) report mean SC-IAT *D*-scores ranging from -.03 (*SD* = .53) to .34 (*SD* = .44) for attitudes toward soda, a mean *D*-score .45 (*SD* = .40) for attitudes toward self, and mean *D*-scores ranging from -.07 (*SD* = .63) to .16 (*SD* = .52) for attitudes toward racial groups. Additionally, Nevid and McClelland (2010) report mean *D*-scores ranging from -.18 (*SD* = .59) to .09 (*SD* = .26) for attitudes toward Barack Obama.

Primary Analyses. A one-sample *t* test was conducted to determine if the mean of *D*-scores for the parent condition (*N* = 116) was significantly different from zero, confirming the implicit association effect for the Parent SC-IAT. Fourteen (10.45%) participants who did not

complete the Parent SC-IAT and four (2.99%) participants with error rates greater than 20% were removed from Parent SC-IAT analyses. Results of the one-sample *t* test revealed that there was a significant implicit association effect for parents, $t(115) = 4.12$, $SEM = .03$, $p < .001$, $d = .38$. The *D*-score of the parents condition ($M = .13$; $SD = .34$) indicated that participants had a stronger preference/association for the congruent (i.e., parents-good) over the incongruent (i.e., parents-bad) target-attribute pairing (see Figure 2).

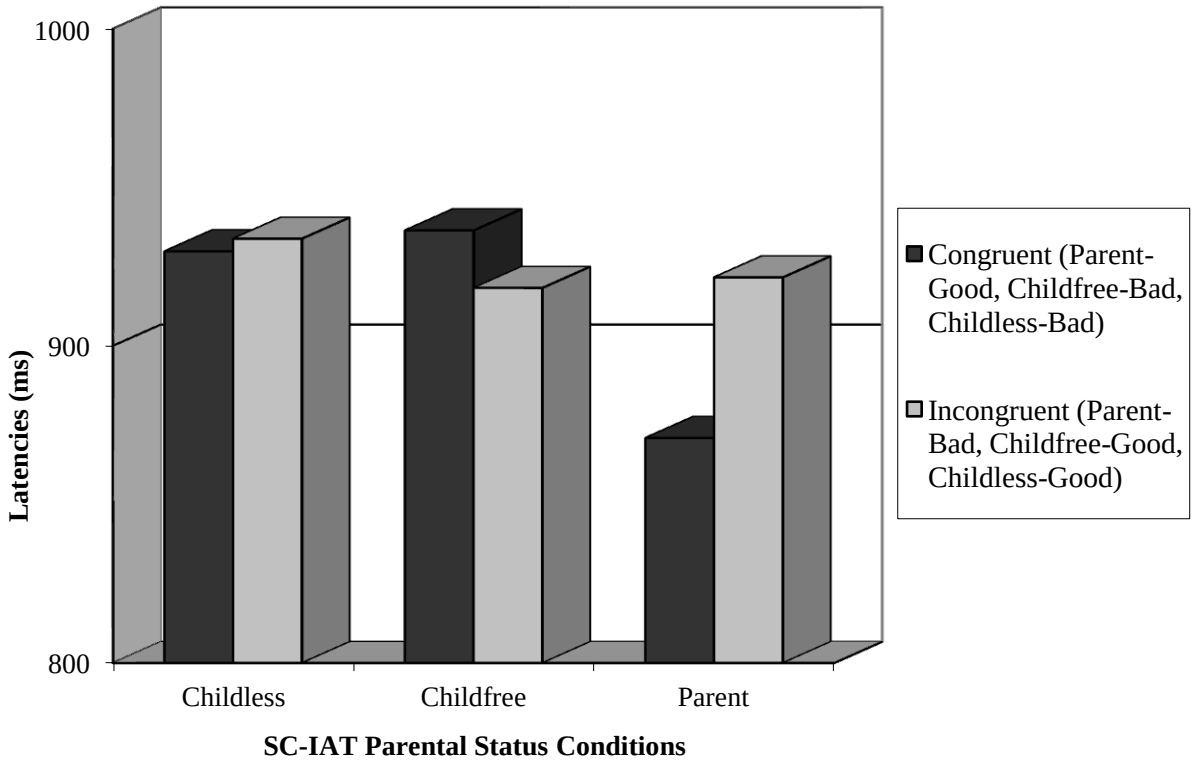

Figure 2. Latencies in ms for congruent and incongruent SC-IAT blocks for each parental status condition.

A second one-sample *t* test was conducted to determine if the mean of *D*-scores for the childless condition ($N = 123$) was significantly different from zero, confirming an implicit association effect for the Childless SC-IAT. Twelve (8.45%) participants who did not complete

the Childless SC-IAT and seven (4.92%) participants with error rates greater than 20% were removed from Childless SC-IAT analyses. Results of the one-sample *t* test indicated that there was not a significant implicit association effect for childless targets, $t(122) = -.43$, $SEM = .03$, $p = .67$, $d = .04$. The *D*-score of the childless condition ($M = -.01$; $SD = .31$) suggested that participants did not have a significant preference for either the congruent (i.e., childless-bad) or incongruent (i.e., childless-good) target-attribute pairings (see Figure 2).

A final one-sample *t* test was conducted to determine if the mean of *D*-scores for the Childfree condition ($N = 117$) was significantly different from zero, confirming the implicit association effect for the Childfree SC-IAT. Twelve (8.89%) participants who did not complete the Childfree SC-IAT and six (4.44%) participants with error rates greater than 20% were removed from Childfree SC-IAT analyses. Results of the one-sample *t* test indicated that there was a significant implicit association effect for childfree targets, $t(116) = -2.56$, $SEM = .03$, $p = .01$, $d = .24$. Contrary to the hypothesized direction, the *D*-score of the Childfree condition ($M = .08$; $SD = .34$) indicated that participants demonstrated a stronger preference/association for the incongruent (i.e., childfree-good) over the congruent (i.e., childfree-bad) target-attribute pairing (see Figure 2).

Hypothesis #5 stated that implicit attitudes, as measured by SC-IAT *D*-scores, will be more positive for the target concept of parents than the target concepts of childless and childfree. Hypothesis #6 further stated that negative implicit associations will be stronger/more negative for the target concept of childfree than for the target concept of childless. A one-way ANOVA was conducted to assess these hypotheses. Before conducting this analysis, scores for SC-IATs were checked for the assumptions of normality, univariate outliers, and homogeneity of variances. The data were normally distributed, with skewness values of .28 ($SE = .23$) for the parent condition, .04 ($SE = .22$) for the childless condition, and -.28 ($SE = .22$) for the childfree

condition; and kurtosis values of -.17 (*SE* = .45) for the parent condition, -.08 (*SE* = .43) for the childless condition, and -.38 (*SE* = .44) for the childfree condition. Inspection of boxplots revealed no univariate outliers within each SC-IAT condition (i.e., parent, childless, and childfree). The Levene's Test for Equality of Variances was non-significant ($p = .24$), indicating homogeneity of variances. Results of the one-way ANOVA ($N = 356$) revealed a significant main effect of SC-IAT condition for *D*-scores, $F(2, 353) = 5.78$, $MSE = .11$, $p = .00$, $\omega^2 = .03$. Post-hoc analyses were conducted with a Bonferroni adjustment to further examine these differences, revealing a more positive implicit association for parents ($N = 116$, $M = .13$, $SD = .34$) than childless targets ($N = 123$, $M = -.01$, $SD = .31$), $p = .00$, but not childfree targets ($N = 117$, $M = .08$, $SD = .34$), $p = .73$. There was no difference in *D*-scores for childless and childfree targets, $p = .09$.

Hypothesis #7

Hypothesis #7 stated that significant and positive correlations will be observed for the relation between implicit and explicit attitudes toward parents, childless individuals, and childfree individuals.

Preliminary Analyses. As stated earlier, three versions of Blake's (1979) measure of attitudes toward childlessness were created to assess explicit attitudes toward targets described as childless, childfree, and parents. Participants were then randomly assigned to report explicit evaluations of one of these three parental status groups. Before assessing Hypothesis #7, scores were calculated by summing responses to Blake's (1979) 4-item scale, resulting in Explicit-Childless, Explicit-Childfree, and Explicit-Parent scores. Because this explicit measure (Blake, 1979) contained only four items, participants missing any item responses were excluded from analyses. Only one (.07%) item response was missing for this 4-item explicit measure, resulting in the removal of one (.26%) participant for missing data. For analyses involving the 1-item

Evaluation Thermometer, 17 (4.4%) of participants were excluded for missing data. Scores were normally distributed for the 4-item explicit measure of attitudes based on parental status (Blake, 1979), with skewness values of .02 (*SE* = .22) for the parents condition, -.02 (*SE* = .21) for the childless condition, and -.08 (*SE* = .22) for the childfree condition; and kurtosis values of -.68 (*SE* = .43) for the parents condition, -.22 (*SE* = .41) for the childless condition, and -.26 (*SE* = .43.) for the childfree condition. Explicit scores derived from the 1-item Evaluation Thermometer (Haddock et al., 1993) were also normally distributed, with skewness values of -1.68 (*SE* = .22) for the parents condition, .51 (*SE* = .22) for the childless condition, and -.08 (*SE* = .22) for the childfree condition; and kurtosis values of 2.95 (*SE* = .44) for the parents condition, .32 (*SE* = .43) for the childless condition, and .54 (*SE* = .44) for the childfree condition.

Descriptive Statistics. Descriptive statistics for the 4-item explicit scale (Blake, 1979) are presented in Table 3. Means were 11.79 (*SD* = 3.55) for Explicit-Childless, 11.93 (*SD* = 3.72) for Explicit-Childfree, and 14.46 (*SD* = 2.5) for Explicit-Parent. The descriptive statistics of the current study were comparable to those reported by Blake (1979), who reported a mean of 12.30 (*SD* = 3.10) when developing this scale of attitudes toward childlessness. Descriptive statistics for the Evaluation Thermometer (Haddock et al., 1993) are also presented in Table 3. Means were 55.89 (*SD* = 18.92) for Childless-Thermometer, 54.68 (*SD* = 21.79) for Childfree-Thermometer, and 81.24 (*SD* = 20.74) for Parent-Thermometer. The descriptive statistics of the Evaluation Thermometer in the current study may be compared to those from other studies that used the Evaluation Thermometer to assess attitudes toward a variety of populations. For example, Haddock et al. (1993) report means ranging from 40.84 (*SD* = 25.48) to 40.87 (*SD* = 21.71) for attitudes toward individuals based on sexual orientation. For attitudes toward self, Karpinski (2004) reports means of 76.64 (*SD* = 15.29) for male participants and 83.50 (*SD* =

10.76) for female participants. It is important to note that variability between the descriptive statistics of the Evaluation Thermometer in the current study and other studies are likely due to the different targets being assessed.

Primary Analyses. Pearson correlations were conducted to assess implicit-explicit relations of attitudes toward parents, childless targets, and childfree targets. The correlation (N = 115) between the Parent SC-IAT D-scores (M = .13, SD = .34) and the Explicit-Parent score (M = 14.45, SD = 2.53) was nonsignificant, $r(113) = .03$, $p = .75$, with $r^2 = .00$. The correlation (N = 112) between Parent SC-IAT D-scores (M = .13, SD = .34) and the Parent-Thermometer scores (M = 82.14, SD = 19.91) was also nonsignificant, $r(110) = .10$, $p = .30$, with $r^2 = .09$. Thus, there was no relation between implicit and explicit attitudes toward parents. There was a significant correlation (N = 120) between Explicit-Parent scores (M = 14.43, SD = 2.50) and scores on the Parent-Thermometer (M = 81.25, SD = 20.83), $r(118) = .35$, $p < .001$, with $r^2 = .12$. As Explicit-Parent scores became more pronatalist, scores on the Parent-Thermometer increased, demonstrating more favorable evaluations of parents.

The correlation (N = 123) between the Childless SC-IAT D-scores (M = -.01, SD = .31) and the Explicit-Childless scores (M = 11.84, SD = 3.65) was nonsignificant, $r(121) = .14$, p = .13 with $r^2 = .02$. However, the correlation (N = 115) between the Childless SC-IAT D-scores (M = -.00, SD = .30) and the Childless-Thermometer (M = 55.03, SD = 18.33) was significant and negative, $r(113) = -.26$, $p = .01$, with $r^2 = .07$. As Childless SC-IAT implicit D-scores demonstrated a preference for the target-attribute pairing of Childless-Bad, explicit Childless-Thermometer scores decreased, or became more unfavorable toward childless individuals. There was a significant and negative correlation (N = 127) between Explicit-Childless scores (M = 11.80, SD = 3.56) and scores on the Childless-Thermometer (M = 55.89, SD = 18.92), $r(125) = -.39$, $p < .001$, with $r^2 = .15$. As Explicit-Childless scores became more pronatalist or

antichildlessness, scores on the Childless-Thermometer decreased, demonstrating more unfavorable evaluations of childless individuals.

The correlation (N = 117) between Childfree SC-IAT D-scores (M = .08, SD = .34) and Explicit-Childfree scores (M = 11.97, SD = 3.69) was significant and positive, $r(115) = -.29$, $p = .002$ with $r^2 = .08$. As Childfree SC-IAT implicit D-scores demonstrated a preference for the target-attribute pairing of Childfree-Bad, explicit scores increased, demonstrating more negative attitudes toward childfree individuals. However, the correlation (N = 113) between the Childfree SC-IAT D-scores (M = .08, SD = .34) and Childfree-Thermometer scores (M = 54.17, SD = 21.88) was nonsignificant, $r(111) = .09$, $p = .33$, with $r^2 = .01$. There was a significant and negative correlation (N = 121) between Explicit-Childfree scores (M = 11.86, SD = 3.72) and scores on the Childfree-Thermometer (M = 54.68, SD = 21.79), $r(119) = -.34$, $p < .001$, with $r^2 = .12$. As Explicit-Childfree scores became more pronatalist or antichildfreedom, scores on the Childfree-Thermometer decreased, demonstrating more unfavorable evaluations of childfree individuals.

Discussion

This final chapter will summarize and discuss findings from the current study and situate these findings in the previous literature on childlessness and childfreedom. It will also discuss strengths and limitations of the current study, as well as the implications of findings and directions for future research.

Summary of Findings

Hypothesis #1. Hypothesis #1a stated that women described as childless and childfree will be rated lower on Interpersonal Warmth and higher on Negative Emotionality than mothers, but that women of all parental statuses would be rated the same for Agency/Drive. As expected, ratings for Agency/Drive did not differ for women described as mothers, childless, and childfree. As previous studies have shown, ratings of Agency/Drive are only likely to vary when occupational status is manipulated (Koropeckyj-Cox et al., 2007; LaMastro, 2001). This finding is likely explained by the fact that Agency/Drive is comprised of characteristics that relate to occupational success, such as ambition, hard-work, and career-orientation. Thus, perceptions of female targets described as having a "successful and rewarding career" are not likely to vary along this variable, regardless of parental status.

Also in partial support of Hypothesis #1a, childless and childfree female targets were perceived more negatively on Interpersonal Warmth than mothers. The Interpersonal Warmth variable assessed personality characteristics such as caring, warmth, likability, kindness, sensitivity, nurturing, and sincerity. This finding is consistent with much previous literature

demonstrating that women without children (both childless and childfree) are perceived more negatively than mothers for these and similar characteristics (e.g., Callan, 1985; Kemkes, 2008; Peterson, 1983; Polit, 1987). For example, several of these studies reported that women without children were rated as less caring, honest, attractive, nurturing, and selfless than women with children, all of which are likely facets of perceived social warmth. Although some previous studies did not distinguish between being childless and childfree, it remains a consistent finding that women without children are viewed more negatively than mothers for traits related to Interpersonal Warmth.

However, Hypothesis #1a was not fully supported, as mothers were only rated more positively for Negative Emotionality than childless targets, but not childfree targets, as hypothesized. However, that ratings of mothers and childfree women did not differ for this and similar variables is not without precedent in previous literature comparing the experiences of childfree women to mothers. In several studies, childfree women were as satisfied with their family size as mothers (DeLyser, 2012; Mueller & Yoder, 1999), expressed little regret over their nonparental status (DeLyser, 2012; Jeffries & Konnert, 2002), and reported similar levels of happiness and depression as mothers (Connidis & McMullin, 1993). Although it is unlikely that most participants are familiar with this literature, their personal experiences with childfree women may have lead them to perceive childfree women as having positive emotional states.

A potential explanation for the differences between women described as mothers and childless, but not childfree, may lie in the attitudinal-behavior congruence demonstrated by mothers and childfree women. As stated in Chapter 2, the current study defined childfree individuals as those who have deliberately chosen not to have children due to a lack of desire to parent. Not having children, then, is behaviorally consistent with this attitudinal position. Although the current study did not define motherhood in attitudinal or motivational terms, it may

be tentatively assumed that women who are mothers are also behaving in an attitudinally-consistent manner. Admittedly, some women become mothers earlier than expected and/or through unintended pregnancy. However, the majority of participants in this study who did not currently have children reported that they planned to parent, a finding that is mirrored in previous literature on young adults and college students (Jacobson & Heaton, 1991; Peterson et al., 2012). Conceivably, then, mothers and childfree women hold parental statuses that are congruent with their parenting desires. Perhaps participants perceived this congruence as reducing the magnitude of some of the characteristics assessed by the Negative Emotionality variable, such as feeling sorry for oneself, loneliness, and inferiority. This may have caused participants to rate targets described as childfree and mothers as having similar emotional states. In contrast, the current study defined the "involuntarily childless" as an individual who may want children but is not a parent due to reasons beyond their control. This state might cause attitudinal-behavioral incongruence between one's desire to parent and actual parental status. The unavoidable barriers and lack of control over fertility experienced by involuntarily childless women may have been perceived by participants as producing emotional states characterized by increased stress and anxiety. In other words, when childless women are juxtaposed against mothers, potential attitudinal-behavioral incongruence may be most prominent, thereby having the largest impact on Negative Emotionality and other similar variables.

Hypothesis #1b further predicted that women described as childfree, when compared to those described as childless, would be rated lower on Interpersonal Warmth, higher on Negative Emotionality, and the same for Agency/Drive. Other than the previously discussed similarity in Agency/Drive between parental status groups, most of Hypothesis #1b was not supported. There were no differences in Interpersonal Warmth or Negative Emotionality between targets described as childless and childfree. This is inconsistent with previous studies reporting that childfree

women are viewed more negatively than involuntarily childless women (e.g., Kopper & Smith, 2001; Lampman & Dowling-Guyer, 1995; Polit, 1978).

There are several potential explanations for the null differences between involuntary childless and childfree targets in the current study. First, there has been little contemporary research conducted on attitudes toward childlessness and childfreedom, with most of the studies cited here published more than 10 years ago. It is possible that attitudes toward these populations may be changing in younger cohorts, with the distinctions between being involuntarily childless and childfree becoming less important. The only important distinctions that may remain are those between parents and nonparents. Indeed, previous but more contemporary studies report that participants view targets more favorably when it is assumed they will *eventually* parent, regardless of the assumed reasons for their current nonparental status (Koropeckyj-Cox et al., 2007). Thus, nonparental status may remain a stigmatizing identity regardless of the reasons for this status, which is supported by the current study's finding that both involuntarily childless and childfree women are perceived more negatively than mothers.

Terror Management Theory (TMT; Greenberg et al., 1986) may provide a useful framework for conceptualizing the perceived distinctions between parents and nonparents. TMT posits that mortality salience leads people to adhere to cultural worldviews that make their lives meaningful, allow them to achieve symbolic immortality, and assuage existential fear of death. Research suggests that positive attitudes are reported toward individuals or groups that also embrace similar cultural worldviews and negative attitudes are reported toward those who do not (Greenberg & Kosloff, 2008; Jackson, 2011). Further cross-cultural studies have suggested that producing offspring may be an important terror management technique (Fritsche et al., 2007; Wisman & Goldenberg, 2005; Zhou et al., 2008; Zhou et al., 2009). When considering female targets described as childless and childfree, participants in the current study may have

experienced increased mortality salience and threats to their cultural worldview that values having children. As Fritsche et al. (2007) suggest, consideration of offspring, even if they are not one's own, is sufficient to influence mortality salience. Alternatively, threats to participants' sense of symbolic immortality may be an even better explanation for negative attitudes toward women without children in the current study. Indeed, offspring may be conceptualized as a means of leaving an enduring symbol of one's life even after death. Thus, perhaps the *pathway* to nonparental status is less important to this generation than the *end result* of not having children.

Another potential reason for no observed differences between involuntarily childless and childfree targets is that the reasons for nonparental status were not given in the vignette, possibly obscuring the motivational and attitudinal differences between these two groups. The current study sought to examine perceived differences between the "childfree" and "childless" labels in the absence of reasons for nonparental status. As has been suggested by studies in many topic areas, the labels chosen to describe a social group can have a profound impact on attitudes toward that group, even in the absence of other descriptive information (e.g., Millington & Leierer, 1996; Penn & Nowlin-Drummond, 2001; Smith et al., 2007; Zilber & Niven, 1995). Online forums and blogs document an ongoing debate regarding the appropriate use of the terms "childless" and "childfree" among individuals who identify with these two statuses. Although academia has begun to acknowledge the important conceptual differences between being childless and childfree (Gillespie, 2003; Gold, 2013; Letherby, 2002), no study had yet assessed perceptions of these two terms among lay people. Similar evaluations of involuntarily childless and childfree female targets in the current study tentatively suggest that a mere manipulation of the terms "childless" and "childfree" was not sufficient to evoke differing explicit perceptions in the absence of more descriptive information. This finding implies that the distinctions between

these two terms may not have yet permeated popular vernacular or culture. Perhaps this is due to the relatively low numbers of women who remain involuntarily childless or childfree throughout the lifespan, which limits exposure to these populations.

Potential lack of exposure to involuntarily childless or childfree populations could be explained by stigma management techniques. According to Goffman (1963), nonparental status can be classified as a discreditable stigma because it is not immediately salient in social interactions. As such, women who are involuntarily childless or childfree have an opportunity to employee strategies to manage stigma. One such technique is "passing," in which an individual who is not a parent pretends they eventually plan to have children to avoid social disapproval (Park, 2002). Another method of avoiding social disapproval is only selecting friends that endorse one's nonparental status (Mueller & Yoder, 1999). According to Mueller and Yoder (1999), approximately 80% of their childfree participants reported using "avoidant strategies," including ending friendships with people who criticized their choice, selecting friends who approve, permitting others to assume they could not have children, pretending they intend to have children in the future, and avoiding conversations about reproducing. Conceivably, all of these stigma management options would limit the degree to which people are exposed to individuals who openly identify as involuntarily childless or childfree, thereby reducing the saliency of differences between these populations.

Hypothesis #2. Hypothesis #2 stated that there would be an interaction between race and parental status, such that women of racial minority groups described as childless and childfree would be perceived more negatively than White women described as childless and childfree. Because occupational status was held constant across conditions, these differences were only predicted for Interpersonal Warmth and Negative Emotionality, but not Agency/Drive. As expected, and previously discussed, ratings of women in all parental statuses and racial groups

were equal for Agency/Drive. However, ratings for Interpersonal Warmth and Negative Emotionality were also not different between White women and women of racial minority groups described as childless and childfree. Only two studies to-date have previously assessed the intersection of race and parental status, reporting contradictory findings. Results of the current study support the findings of Koropeckyj-Cox et al. (2007), who found that the race of the vignette targets did not influence personality ratings of a childless couple. However, findings of the current study are inconsistent with the results of Vinson et al. (2010), who found that Black mothers were rated more positively than Black childfree women, but ratings did not differ for White targets regardless of parental status.

It is important to note that null findings at the intersection of race and parental status in the current study are also inconsistent with the conceptual framework of intersectionality (Cole, 2009; Crenshaw, 1989; Sawyer et al., 2013). According to the literature on intersectionality, identification with more than one disadvantaged social group can increase one's experiences of discrimination and other negative outcomes. Indeed, it can be argued that individuals identifying with female gender, minority race, and nonparental status can be conceptualized as "other" in U.S. culture. As such, the concept of intersectionality predicts that minority group membership produces exponential stigma along multiple identity axes. Yet, results of the current study do not support this assumption for the intersection of race and parental status. Perhaps intersections of parental status with other target identities, such as those based on sexual orientation, age, religious affiliation, and disability status, would have had a greater influence on attitudes than target race. As previously discussed, the cultural experiences of men and women are situated in a gendered division of labor characterized by relationships with reproduction (Hartsock, 1983). Thus, it is likely that there are gendered differences in how childfreedom, involuntary

childlessness, and parenthood are defined, perceived, chosen, and experienced. The inclusion of male targets may have revealed a significant interaction between gender and parental status.

Several methodological explanations also may be offered for the nonsignificant interaction between racial group and parental status in the current study. First, use of written vignettes may have limited ecological validity. It is likely that evaluations of others are often made following visual inspection, rather than after reading a fictitious scenario about a couple. Second, perhaps the measures used were not sensitive enough to detect subtle differences in perceptions of the targets. A third potential explanation for this finding could be that VCU participants simply did not notice the racial identification of the female vignette character because they are already accustomed to a relatively diverse academic setting (e.g., VCU student population is approximately 47% non-White). However, manipulation of vignette target race was successful, as most participants (84%) correctly identified the race of the female vignette character during the manipulation check. In contrast, participants who failed the manipulation check did so because they were unable to correctly identify the female target's parental status (specifically, childless vs. childfree).

Another potential explanation for a nonsignificant interaction between vignette target race and parental status is that other variables may have a greater influence on perceptions. For example, participant religious affiliation was associated with ratings for all three personality characteristic rating scales (i.e., Interpersonal Warmth, Agency/Drive, Negative Emotionality). Indeed, prior research suggests that those who report conservative religious beliefs often endorse negative evaluations of the childfree (Koropeckyj-Cox &Pendell, 2007a). Likewise, participants who attend church regularly also report negative attitudes toward childfreedom (Gubernskaya, 2010; Noordhuizen et al., 2010). Although this study did not measure religious conservatism, *degree* of religiosity, or *frequency* of religious activities, it nonetheless supports previous

findings that variables related to religion are associated with attitudes toward women of varying parental statuses. Unfortunately, the current study lacked the diversity required to conduct a thorough assessment of the relation between specific religious affiliations and attitudes. Nevertheless, in the current sample, it could be that religious affiliation had a stronger influence on attitudes toward parental status than the race of the female vignette target.

A final explanation for the current findings could be evolving attitudes concomitant with changing rates of childlessness/childfreedom across the races. Some research suggests that childlessness/childfreedom is predominantly a White phenomenon (e.g., Abma & Martinez, 2006; Dye, 2008; Martinez et al., 2012), while other research suggests that rates are converging for the races (Boyd, 1989; Lundquist et al., 2009). If rates of childlessness/childfreedom differ for the races, attitudes at the intersection of race and parental status may reflect this disparity. The results of Vinson et al. (2010) tentatively support this supposition, as Black childfree women were perceived more negatively than Black mothers, but attitudes did not vary toward White women. However, if rates of childlessness/childfreedom are converging, attitudes at the intersection of race and parental might reflect this growing similarity. Indeed, the current study and Koropeckyj-Cox et al. (2007) found no interaction between race and parental status for evaluations of female targets. Rather, as rates of childlessness/childfreedom converge for the races, gender norms promoting pronatalism may be reinforced *equally* across all racial groups. Thus, results of the current study suggest that attitudes favoring pronatalism may be universal, making nonparental status a stigmatized identity, regardless of target racial identification.

Hypothesis #3. Hypothesis #3 stated that stereotypes will vary by the label chosen to describe women, with mothers, childless women, and childfree women being differentiated by stereotypes according to the Stereotype Content Model (SCM). This hypothesis further predicted that mothers and childless women will be rated high in Warmth, but low in

Competence, demonstrating ambivalent, paternalistic stereotypes. It additionally predicted that childfree women will be rated low in Warmth, but high in Competence, demonstrating an ambivalent, envious stereotype. Partial support for this hypothesis was found, as all parental status groups were ambivalently stereotyped. As predicted, mothers were rated higher in Warmth than in Competence, possibly subjecting them to the pity and sympathy characteristic of paternalistic prejudice. Also as predicted, childfree women were rated higher in Competence than in Warmth, possibly subjecting them to the jealousy and resentment characteristic of envious prejudice. However, contrary to this hypothesis, childless women were ambivalently stereotyped as high Competence-low Warmth, and shared the same stereotype as childfree women.

To the author's knowledge, the only other study to specifically evaluate female parental status using the SCM found similar results. Cuddy et al. (2004) reported that working mothers landed in the low Competence-high Warmth cluster, while working childless women landed in the high Competence-low Warmth. Although this study only assessed SCM clustering of women in the workplace, and did not include childfree women in its analysis, its results nonetheless inform those found in the current study. Eckes (2002) conducted a related, but conceptually distinct study, finding that career women were stereotyped as low Warmth-high Competence, and housewives were stereotyped as high Warmth-low Competence. Furthermore, of all female subgroups, career women were rated the most competent but least warm subgroup, and housewives were rated most warm but least competent. Although career women certainly have children and housewives often hold employment, these female subgroups may be tentatively considered traditional approximations of "childfree women" and "mothers," respectively.

Upon first consideration, the finding that childless and childfree targets were both stereotyped as low Warmth-high Competence is puzzling. However, lack of participant

understanding of the conceptual differences between being "childless" and "childfree" may again explain nonsignificant differences between these two groups. As discussed, attributions of responsibility often place social groups in the SCM space, with individuals perceived to have little control over their outcomes typically stereotyped as high Warmth-low Competence. Referring again to the current study's definition, involuntarily childless individuals would be parents *but for some uncontrollable barrier*. Conceivably, then, women whose nonparental status is perceived to be beyond their control would likely be stereotyped as high Warmth-low Competence and viewed with pity and sympathy (i.e., paternalistic prejudice). However, in the absence of reasons for nonparental status, perhaps participants viewed the childless and childfree as indistinct groups. In this context, similar attributions of responsibility may have been made for childless and childfree targets, resulting in the same low Warmth-high Competence stereotype.

Alternatively, it may be that the distinctions between the labels used to describe women without children are simply *unimportant* to those who do not identify with these social groups. In fact, a parallel can be drawn with literature on ethnic/racial group identity. For example, Kiang & Luu (2013) reported disconcordance between the ethnic labels Asian American adolescents choose to describe themselves (e.g., Chinese, Vietnamese, Korean) and labels that European American peers use to describe them (e.g., Asian American). Similarly, Taylor, Lopez, Martínez, and Velasco (2012) report that the majority of individuals from Spanish-speaking countries reject pan-ethnic labels (e.g., Hispanic, Latino), preferring instead to describe themselves by their country of origin (e.g., Mexican, Dominican, Cuban). Conceivably, a similar process may be occurring for individuals of nonparental status. To those who do not have children, the distinctions between being childless and childfree are relevant and crucial (Bordeaux, 2012; coolchildfreeguy, 2012; Kathryn, 2010; Smith, 2009; Smith, 2012). However,

to individuals in the outgroup, perhaps distinctions between being childless and childfree are less important than the shared commonality of not having children. Thus, outgroup members may be satisfied in applying a pan-parental status label (e.g., nonparent), while ingroup members identify themselves using more specific labels (e.g., childless and childfree).

As hypothesized, only ambivalent stereotypes emerged for women of varying parental statuses. According to the SCM, outgroups are often ambivalently stereotyped (i.e., high Warmth-low Competence or low Warmth-high Competence) or viewed with contempt (i.e., low Warmth-low Competence), with the high Warmth-high Competence cluster often, but not always, reserved for ingroups. In the current study, mothers were stereotyped as high Warmth-low Competence, implying that participants may have viewed them as an outgroup. Childless and childfree targets were also possibly viewed as outgroups, as denoted by their low Warmth-high Competence stereotype. Yet, considering that 73% of this sample reported that they intended to have children, participants might have been expected to view mothers as an ingroup. Alternatively, because 97% of participants reported that they did not currently have children, it might have been equally expected that they would view childless or childfree targets as an ingroup. However, that neither mothers nor targets with nonparental status were viewed as high Warmth-high Competence implies that participants may have identified with an unnamed ingroup, such as the *temporarily* childfree. Indeed, identification as temporarily childfree permits current nonparental status while acknowledging future intent to parent. Had the temporary childfree been included as a target on SCM measures, participants may have viewed them as an admired ingroup with a high Warmth-high Competence stereotype.

Hypothesis #4. As stated previously, Hypotheses # 4, 5, 6, and 7 assess attitudes toward non-gendered targets broadly defined as childless, childfree, and parents. Hypotheses #4a-c stated that an implicit association effect, as measured by implicit attitudes on the SC-IAT, would

be observed toward targets described as childless, childfree, and parents. This hypothesis was partially supported, as the target concept "parent" was more strongly associated with the attribute "good" than "bad," demonstrating an implicit association effect in the expected direction. Although this is the first study to assess implicit attitudes toward parents, this finding is supported by studies reporting that explicit attitudes were more favorable toward parents than nonparents (e.g., Callan, 1983; Ganong, Coleman, &Mapes, 1990; Kopper & Smith, 2001; LaMastro, 2001; Lampman & Dowling-Guyer, 1995). That participants in the current study held positive *implicit* attitudes toward parents extends these findings.

However, a wholly unexpected finding of the current study was that the target concept "childfree" was *also* more strongly associated with the attribute "good" over "bad." Although this demonstrates an implicit association effect for childfree targets, the effect was opposite to the hypothesized direction. Findings from this and other studies may offer some explanation for this finding. For instance, it is tentatively suggested by SCM results of the current study that participants perhaps did not consider mothers to be a reference group, a finding that may also be implied by SC-IAT results. Perhaps the task of quickly classifying childfree stimuli (e.g., kid-free, baby-free, non-parent) activated the most easily accessible implicit association. In this case, the target concept "childfree" may have actually activated the participants' *self-concept*, rather than implicit attitudes toward childfree populations as an outgroup. Indeed, 97% of participants in this study reported that they did not currently have children, permitting their temporary identification as childfree. As previously discussed, contemporary research suggests that young adults and college students hold predominantly negative attitudes toward parenting and pregnancy (e.g., Frost et al., 2012; Miller, 2011; Peterson et al., 2012; Vasilenko et al., 2012). In this context, findings from the current study may imply that college-aged or young adult populations temporarily view pregnancy as disadvantageous and the childfree status as

advantageous. This nicely illustrates Letherby's (2002) suggestion that it may be more appropriate to conceptualize nonparental status on a continuum with involuntary childlessness at one extreme and the voluntary childfreedom at the other. Letherby (2002) further suggested that life choices and circumstances may determine an individual's current location on this continuum. Pursuing a college education may be one such life circumstance that permits participants to temporarily claim a childfree identity, despite eventually planning to parent. That pregnancy and parenting are considered temporarily negative outcomes in this age group is a likely explanation for implicit attitudes that favor childfreedom.

The hypothesis that implicit associations would be stronger when the target concept "childless" is paired with "bad" than with "good" was also not supported. No implicit association effect was observed for the target concept "childless." This finding is puzzling in the context of other results of the current study. On measures regarding warmth, emotionality, and competence, participants made no distinctions between childless and childfree targets. Yet, a clear distinction emerged on implicit measures, as an implicit association effect was observed for childfree targets, but not for childless targets. Perhaps implicit associations were activated solely by the suffixes "less" and "free," independent of parental status. The suffix "free" is decidedly positive, and may have activated positive implicit associations. The suffix "less," on the other hand, has more negative connotations. Yet, this does not explain why participants did not demonstrate a preference for the childless-good pairing instead of no association at all.

A large degree of variability in attitudes toward involuntary childlessness is another explanation for the null implicit association effect observed for childless targets. Perhaps the potential for involuntarily and permanent childlessness evokes a wide variety of responses in this population. In other words, participants with strong associations for "childless" paired with "bad" may have balanced out those with strong associations for "childless" paired with "good."

Indeed, approximately half of participants had negative *D*-scores (*n* = 62; 50.4%; i.e., preference for childless-good), while the other half had positive *D*-scores (*n* = 61; 49.6%; i.e., preference for childless-bad). Despite this near-perfect split on the frequency of positive and negative *D*-scores, had the *magnitude* of positive *D*-scores outweighed the *magnitude* of negative *D*-scores, an implicit association effect in the hypothesized direction would have been observed. That the hypothesized implicit association effect did not occur may indicate attitudinal variability in this population toward involuntary childlessness.

Alternatively, perhaps participants simply do not have any strongly developed associations for involuntary childlessness. Assuming the Childfree SC-IAT activated participants' positive self-concept, participants may have already implicitly considered and are currently benefiting from the advantages of a childfree lifestyle (e.g., pursuit of education without concurrent responsibilities of raising children). As a lifestyle currently experienced, positive implicit associations may already exist for childfreedom. However, as has already been discussed, 73% of this sample reported that they intend to have children, meaning that they view their childfreedom as temporary and future parenthood assured. Furthermore, as young adults actively avoiding pregnancy, it is possible that few participants have direct knowledge of their actual ability to reproduce. Perhaps participants who assume that they will be able successfully reproduce in the future have given little consideration to the potential uncontrollable barriers to reproduction, leading to underdeveloped implicit associations for involuntary childlessness.

That the distinction between childfree and childless targets emerged on implicit but not explicit measures in the current study reflects the indirect and unconscious nature of implicit attitudes. Not only do implicit measures claim to assess attitudes in an indirect fashion (Fazio & Olson, 2003; Greenwald &Banaji, 1995; Hofmann et al., 2005; Nosek, 2007; Nosek et al., 2011; Rezaei, 2011), but implicit measures may also assess attitudes of which participants are actually

unaware (Nosek, 2007; Nosek, 2009). That participants are unaware of their implicit attitudes that favor childfreedom may explain why participants made no distinctions between childless and childfree targets on explicit measures, but the distinction emerged within SC-IAT implicit responses.

Hypothesis #5 and 6. Hypothesis #5 stated that implicit attitudes would be more positive for the target concept "parents" than the target concepts "childless" and "childfree." This hypothesis was partially supported, as implicit associations favored parents over childless targets. However, Hypothesis #5 was partially unsupported, as parenthood and childfreedom were both viewed positively by this age group, with neither being significantly preferred over the other on implicit measures. Hypothesis #6 further stated that implicit associations will be more negative for the target concept "childfree" than for the target concept "childless," but this hypothesis was wholly unsupported. Participants did not demonstrate an implicit preference for childless targets when compared with childfree targets. Similar to observations on explicit measures, participants did not distinguish between targets described as childless and childfree on implicit measures.

Hypothesis #7. The seventh and final hypothesis of the current study stated that significant and positive correlations will be observed in implicit-explicit relations of attitudes toward targets described as childless, childfree, and parents. Two measures of explicit attitudes were used: Blake's (1979) 4-item explicit scale of attitudes toward childlessness and a 1-item Evaluation Thermometer (Haddock et al., 1993). Three versions of each of these measures were created to assess explicit attitudes toward targets described as childless, childfree, and parents.

Hypothesis #7 was partially supported for childless targets, as explicit responses on the Childless-Thermometer were negatively related to implicit attitudes on the Childless SC-IAT. As implicit attitudes toward childless targets became more unfavorable (i.e., preference for the

childless-bad pairing), explicit scores on the Childless-Thermometer became more antichildlessness or pronatalist (e.g., lower scores on the 0-100 scale). On the other hand, implicit attitudes were not related to explicit attitudes toward childless targets as assessed by Blake's (1979) Explicit-Childless scale. Hypothesis #7 was also partially supported for childfree targets, as the association between implicit attitudes and Blake's (1979) Explicit-Childfree scale was significant for childfree targets. As implicit scores became more unfavorable (i.e., preference for the childfree-bad pairing), explicit scores became more antichildfreedom or pronatalist. Yet, explicit responses on the Childfree-Thermometer were not associated with implicit attitudes as measured by the Childfree SC-IAT. However, the portion of Hypothesis #7 regarding implicit-explicit relations of attitudes toward parents was completely unsupported. Parent SC-IAT scores were not related to scores on the Parent-Thermometer, nor were they related to scores on Blake's (1979) Explicit-Parent scale. In this sample, it did not appear that implicit attitudes toward parents were related to explicit attitudes toward parents.

The modifications made to Blake's (1970) explicit scale may be one explanation for some of these null findings. This scale was designed to assess pronatalism, which is defined as "...encouragement of all births as conducive to individual, family, and social well-being" (DeSandre, 1978, as cited by Heitlinger, 1991, p. 344). Items on this scale, originally designed to assess attitudes to childless individuals, were modified in the current study to also assess attitudes toward parents and childfree individuals. To maintain conceptual correspondence, preserve the meaning of items as much as possible, and permit comparisons between explicit scales, as few changes as possible were made to each item to create the childfree and parent versions used in the current study. However, perhaps some items did not easily lend themselves to assessing attitudes toward parents. For example, one original item read, "Childless couples are more likely to lead empty lives than couples with children." Modifications to reflect parent

targets changed the item to "*Parents* are more likely to lead empty lives than couples *without* children" (changes italicized for emphasis). Not only did these modifications reverse the direction of some items, but the newly ineloquent wording may have caused participants to more carefully consider their responses, thereby reducing spontaneity of responses and/or subjecting them to social desirability bias. Although moderately-sized correlations between both explicit measures for all parental status targets indicated some explicit-explicit conceptual correspondence, modifications to the 4-item scale may have resulted in a lack of conceptual correspondence between the implicit SC-IAT measure and the 4-item explicit measure. Lack of conceptual correspondence may also explain null findings between Parent SC-IAT scores and responses on the 1-item evaluation thermometer. Indeed, decreased response spontaneity and weak implicit-explicit conceptual correspondence often explains weak implicit-explicit correlations (Cameron et al., 2012; Gawronski et al., 2007; Greenwald et al., 2009; Hofmann et al., 2005b; Schnabel et al., 2008). Additionally, as stated earlier, the measures used in the current study may have lacked the sensitivity required to detect significant relations among variables. Nonetheless, using Blake's (1979) explicit 4-item scale and the 1-item evaluation thermometer (Haddock et al., 1993) was the optimal way to enable comparisons between the three versions of explicit measures.

Significant implicit-explicit correlations that favored one explicit measure over another (Blake's 4-item explicit scale vs. 1-item evaluation thermometer) are even more puzzling in light of moderately-sized correlations between explicit measures for all parental status groups. For example, implicit childless attitudes correlated only with scores from the explicit evaluation thermometer, and implicit childfree attitudes only correlated with scores from Blake's (1979) explicit scale. There are several tentative explanations for these findings. First, the potential shortcomings of the SC-IATs and both explicit measures used may explain unusual findings

regarding implicit-explicit relations. Because these were the first SC-IATs to assess implicit attitudes based on parental status, no previous estimations of reliability and validity exist. Similarly, there is limited psychometric information available for Blake's (1979) explicit scale of attitudes toward childless individuals. Although this and previous studies (Bausch, 2006; Blake, 1979) provide tentative evidence of internal consistency for Blake's (1979) scale, further work needs to be conducted to assess its reliability and validity. Furthermore, estimates of internal consistency cannot be made for 1-item measures, such as the evaluation thermometer, although estimates of temporal stability for this measure are strong (e.g., Cranney et al., 2001; Haddock et al., 1993). Thus, findings involving these measures must be interpreted cautiously and carefully replicated to further explore implicit-explicit relations of attitudes based on parental status.

A second explanation for inconsistent implicit-explicit results could be that participants may not hold identical implicit attitudes toward childless and childfree targets. Indeed, participants demonstrated positive implicit attitudes toward childfree targets, but demonstrated variability in attitudes toward or underdeveloped associations for childless targets. Thus, it may be tentatively argued that implicit attitudes toward childless and childfree targets vary. It may also be tentatively argued that the construct assessed by Blake's (1979) 4-item explicit scale differs from the construct assessed by the 1-item evaluation thermometer (Haddock et al., 1993). For example, asking participants to quantify how "favorably" they view a given target on a 0 to100 scale is an unequivocally different task than asking them to indicate their agreement toward potentially socially-sensitive statements on a 5-point Likert-type scale (e.g., "A childless woman is likely to feel unfulfilled unless she becomes a mother"). Moreover, responses made to four items on a 5-point Likert-type scale offer a more nuanced picture of attitudes than responses made on a 1-item measure. Indeed, although correlations ranging from -.33 to -.39 indicate *some* theoretical overlap, moderately-sized correlations imply that these two explicit measures are

assessing related, but partially independent constructs. Therefore, if implicit attitudes toward childless and childfree targets do indeed differ, and the constructs assessed by both explicit measures also possibly differ, it becomes more likely that dissimilar patterns may emerge in implicit-explicit relations of attitudes toward childless and childfree targets.

Strengths

The current study has several strengths. First, the analogue research design increased the internal validity of the study. The use of written vignettes allowed for the systematic manipulation of race and parental status, which would have otherwise been difficult, if not impossible. In addition, this design increased both the precision and specificity of operational definitions of the variables manipulated. Furthermore, the random assignment of vignette materials to participants should have eliminated participant characteristics as confounding variables. These advantages increased the internal validity of the study by attempting to eliminate extraneous and confounding variables that would otherwise influence results.

Second, use of the Single Category Implicit Association Test also contributes strength to the current study. By asking participants to work as quickly and accurately as possible, the automaticity of attitude/association activation was assessed with a timed-reaction measure. Additionally, that the IAT and SC-IAT are relatively resistant to faking (Gawronski, 2009; Karpinski & Steinman, 2006; Schnabel et al., 2008; Steiger et al., 2011), especially in comparison to explicit measures of attitudes, partially reduced social desirability bias and/or dishonesty that may skew results on direct measures. Moreover, the current four-block format combined with the improved scoring algorithm makes the SC-IAT a moderately reliable and valid assessment of implicit attitudes (Breen & Karpinski, 2013; Dohle, Keller, & Siegrist, 2010; Karpinski & Steinman, 2006; Nevid & McClelland, 2010).

Additionally, although there is limited psychometric data available for Blake's (1979) explicit measure of attitudes toward childlessness, the current study found acceptable estimates of internal consistency for this scale ($\alpha = .82$). Because few studies have used this scale since its initial development, it has not been subjected to rigorous reliability and validity analyses across diverse samples. However, the current study provides partial validation of this underutilized scale in a diverse and contemporary undergraduate population.

A final strength of this study is that it makes several unique contributions to the literature on childlessness/childfreedom. First, to the author's knowledge, this the only study to assess implicit attitudes based on parental status using newly-created SC-IAT measures, and to assess the relation of implicit attitudes to explicit attitudes based on parental status. Second, this study has helped to clarify inconsistent findings regarding attitudes at the intersection of race and parental status. By taking an intersectional approach and including four major racial categories as targets, the current study has presented childless and childfree women as a heterogeneous group with multiple racial identities and varied reasons for nonparental status. Third, this was the first study to empirically assess differing perceptions toward the terms "childless" and "childfree" in the absence of explicit reasons for nonparental status. Although the current study did not find consistent findings that the college students *explicitly* distinguish between these two terms, these findings nonetheless contribute to an important dialogue regarding public perceptions of these parental status groups. Fourth, this is the first study to distinguish between women described as childless and childfree using an SCM analysis, which provides a more nuanced view of ambivalent stereotyping based on parental status and challenges previous conceptualizations of attitudes toward childless and childfree women as unidimensional and purely negative.

Limitations

Design. There are, however, several limitations that should also be considered. Although analogue study designs are necessary due to the inability to manipulate certain variables in a laboratory setting, research designs using written vignettes may limit the ecological validity of findings. Evaluations of others are often made during face-to-face interactions, rather than after reading a brief written description. Therefore, the use of written vignettes introduced an artificiality that may not exist in the real-world settings where these interactions are likely to occur. Consequently, the external validity of the study and generalizability of results are limited.

Measures. The use of self-report data for the personality characteristic rating scale and the explicit attitude measures introduced several threats to construct validity. First, self-reported perceptions of vignette targets are an indirect measure of perceptions. As such, perceptions assessed indirectly may not accurately reflect participants' genuine perceptions of women based on parental status. Moreover, despite the anonymity of online data collection, self-reporting increased the likelihood that social desirability and dishonesty influenced responses, especially on the personality characteristic and explicit measures.

There are also limitations to the psychometric properties of several measures used in the current study. For example, previous research using the personality characteristic rating scale has found low alphas for the Negative Emotionality scale (.57, LaMastro, 2001; .59, Koropecky-Cox et al., 2007). Although the current study found an alpha of .67 for this scale, further research is needed to examine the psychometric properties of the Negative Emotionality scale. Moreover, as stated earlier, additional research is needed to examine the reliability and validity of both explicit measures used in the current study. Finally, the estimate of internal validity for the parent version of Blake's (1979) explicit measure was quite low ($\alpha = .48$). Thus, results regarding these measures need to be interpreted with caution.

Additionally, the SC-IAT is not without its limitations. For example, some of the psychometric properties of the IAT may be unstable. For instance, some studies show that correlations between the IAT and other implicit measures are typically low or completely null (Cunningham et al., 2001; Fazio & Olsen, 2003; Schnabel et al., 2008). Moreover, assessments of test-retest reliability are equally unsatisfactory, with values ranging from .51 (Hofmann et al., 2005) to .56 (Nosek et al., 2007) for a range of retest intervals (typically 0 to 30 days). However, it has been suggested that these poor psychometric properties are due to the methodological limitations of implicit measures, such as measurement error, which is common in reaction-time assessments (Cunningham et al., 2001; Fazio & Olsen, 2003; Gawronski et al., 2007; Rezaei, 2011). Additionally, at least one study suggests that low correlations between the IAT and other implicit measures may be due to the low reliability of *other* implicit assessments, and not the IAT (Schnabel et al., 2008).

The use of the newly developed Single Category IATs based on parental status also introduced specific limitations to this study. First, because these are the only SC-IATs of their kind, they were not previously established as reliable and valid. Second, determining exemplar descriptors for the nonparent target-concept posed a particular challenge due to the fact that individuals without children do not share overtly salient and universal features. Rather, their marked *absence* of children is their most distinguishable feature as a group. As such, it was challenging to convey this information with SC-IAT word stimuli. Although every attempt was made to ensure that the SC-IAT categories used in this study were mutually exclusive, the possibility that participants could classify stimuli according to other unspecified criteria was a threat to construct and internal validity (Hofmann & Schmitt, 2008). In addition, as demonstrated by previous research, there are multiple mediating and moderating factors that may influence IAT results (Fazio & Olsen, 2003; Gawronski et al., 2007; Greenwald et al., 2009;

Hofmann et al., 2005; Nosek et al., 2011; Schnabel et al., 2008); however, these variables were not assessed in the current study. For example, the current study did not assess the degree to which participants have the motivation, opportunity, ability, and cognizance to control their SC-IAT responses. Additionally, although the social sensitivity of the topic has been shown to influence IAT results (Cunningham et al., 2001; Fazio & Olsen, 2003; Greenwald et al., 1998; Greenwald & Banaji, 1995), the current study did not attempt to establish just how socially sensitive the topic of parental status actually is.

Moreover, because SC-IAT data collection was not conducted in a laboratory setting, a number of factors could not be controlled that may influence SC-IAT results. Various distractions, such as noise level, room temperature, and the presence of others may be particularly problematic for the collection of timed-reaction data, during which the participant's ability to produce rapid responses is of paramount importance. The speed and quality of one's internet connection, and differences in processing performance and random access memory speeds also likely differed from participant to participant and may have impacted SC-IAT results. However, because network latencies and memory speeds were conceivably consistent *within* participants, they should not, in theory, affect the *magnitude* of each individual single category implicit association effect. Furthermore, previous research suggests that there are very few differences between lab- and web-based IAT results and that implicit-explicit correlations may be stronger for web-based than lab-based IAT data (Houben & Wiers, 2008). Moreover, the standard scoring algorithm (Greenwald et al., 2003) used for scoring the IAT and SC-IAT was developed and normed on data collected from thousands of participants in online samples (Nosek, Banaji, & Greenwald, 2002). Finally, the online platform used in the current study to collect data was designed to adapt across multiple operating systems, thereby decreasing the

likelihood that differences between personal computers had a dramatic impact on SC-IAT results.

Sample. A final limitation lies in the sampling technique used in the current study. For example, the researcher relied on convenience sampling of university students to recruit participants. This strategy likely yielded a sample that is not representative of the average American adult. Indeed, research suggests that college students represent only a small portion of the population when compared to uneducated American adults and other Western cultures (Henrich, Heine, & Norenzayan, 2010). Furthermore, studying attitudes based on parental status in college-aged or young adult populations may be particularly challenging as parental status may simply not be a prominent issue in young cohorts. College-aged individuals likely share a unique relationship with childbearing and parenting due to strong social norms discouraging pregnancy in this age group. Additionally, individuals in this age group may not have matured enough to understand the meaning of parenting. Indeed, age may have a particularly potent influence on attitudes toward involuntarily childless and childfree populations, and dramatically different results could be observed in older populations (e.g., individuals in their 30s, 40s, and 50s). Similarly, constructs such as mortality salience and symbolic immortality may be age-bound, influencing individuals of varying ages in different ways. Thus, results of the current study may only apply to college-aged students, limiting generalizability of results to older cohorts.

Similarly, this sample may not be representative of the national population of college students. Specifically, because participants were recruited from a research pool in the psychology department, the sample likely over-represents students with an interest in psychological and social topics. Social stigma and negative attitudes toward certain populations may be salient issues in this sample, thus motivating participants to temper their negative

perceptions of women based on parental status. This sample also over-represented young, female students; therefore, it may not be adequate to assess perceptions of women based on parental status among males or nontraditional college populations. Due to these sampling flaws, subsequent findings may not accurately reflect national undergraduate attitudes and generalizability of results may be limited to VCU university students only.

Implications

Despite these limitations, results of the current study have a number of implications. By assessing attitudes in a diverse, contemporary sample of the youngest adult cohort in the U.S., the current study provides evidence for the persistence of negative attitudes toward women without children. Being involuntarily childless or childfree remains a stigmatized identity when compared with being a mother, despite the social, political, and financial gains of U.S. women (Jacobson et al., 1988; Lundquist et al., 2009). That negative perceptions and stigmatization of women with nonparental status were observed even in this college-aged population illustrates the pervasive influence of pronatalist attitudes in U.S. culture. It also implies that the processes and repercussions of stigmatization of women of nonparental status may be even more dramatic in older populations, who tend to report more negative attitudes toward women of nonparental status than younger populations (e.g., Gubernskaya, 2010; Merz & Liefbroer, 2012; Noordhuizen et al., 2010).

Mental health professionals should be prepared to treat the distress associated with the processes of stigmatization, including labeling, stereotyping, status loss, and potential discrimination (Link & Phelan, 2001). Childfree women, despite experiencing similar well-being to mothers (e.g., DeLyser, 2012; Mueller & Yoder, 1999), may nonetheless need therapeutic support in developing and implementing the stigma management techniques reported in the literature (Mueller & Yoder, 1999; Park, 2002). It is also possible that women who would

rather have chosen a childfree lifestyle might nonetheless have children to avoid the stigma associated with the childfree identity (as suggested by Polit, 1978). This may be an additional source of distress that could cause women to present for mental health services. Moreover, the possible attitudinal-behavior incongruence experienced by involuntarily childless women who want but cannot have children may require targeted interventions in both individual and group modalities.

This is the first study to distinguish between women described as childless and childfree using an SCM analysis, thus making a unique contribution to the literature on ambivalent stereotyping. According to SCM theory, ambivalent stereotyping is associated with affective and behavioral patterns that could have a multifaceted impact on the stereotyped population (e.g., Fiske et al., 2002; Fiske et al., 2007). Although not assessed in the current study, women of varying parental statuses may nonetheless experience these affective and behavioral reactions in social interactions. For example, mothers may experience paternalistic prejudice, characterized by downward social comparisons, emotional reactions of pity and sympathy, and behavioral responses of active facilitative and passive harm (Cuddy et al., 2007). Similarly, involuntarily childless and childfree women may experience envious prejudice, characterized by upward social comparisons, emotional reactions of envy and resentment, and behavioral responses of passive facilitative and active harm behaviors (Cuddy et al., 2007).

An intersectional approach demands that researchers acknowledge that female identity is a complex crossroads of perspectives and experiences that cannot be considered in isolation (Sawyer et al., 2013; Samuels & Ross-Sheriff, 2008; Warner, 2008; Warner & Shields, 2013). Rather, these personal, cultural, and institutional experiences combine in ways that often produce compound discrimination and inequality (Davis, 2008; Samuels & Ross-Sheriff, 2008; Warner, 2008; Warner & Shields, 2013). Nonetheless, including the current study, only three studies to-

date have assessed perceptions at the intersection of race and parental status. Most previous studies have treated involuntarily childless and childfree populations as racially homogeneous (i.e., White) or only dichotomized them to only Black and White populations. This study included four major racial categories in its analyses (i.e., Black, Hispanic, Asian, and White), permitting a more nuanced understanding of attitudes at the intersection of race and parental status. Although there was no evidence in the current study that the combined influence of race and parental status impacted attitudes toward women, results revealed that negative perceptions of women without children may be uniform across racial groups. In other words, the consequences of violating social norms regarding parenting, such as stigmatization, may apply equally across racial groups. This study represented an important step forward in acknowledging the wide diversity of involuntarily childless and childfree women, and potentially their shared experiences.

This is also the first study to assess implicit attitudes based on parental status. In creating three new SC-IATs, the current study makes a unique contribution to the growing literature on implicit attitudes. Contrary to what was hypothesized, participants demonstrated positive implicit attitudes toward both parents and childfree targets, but neither positive nor negative bias toward childless targets. These results are particularly interesting, as childless and childfree targets were rated less favorably than mothers/parents on nearly all explicit measures in this study. These findings illustrate the often unconscious and uncontrollable nature of implicit attitudes (e.g., Greenwald & Banaji, 1995; Nosek, 2007; Nosek, 2009; Nosek et al., 2011; Rezaei, 2011), and highlight their potential differences from explicit attitudes (Dasgupta, 2010; Nosek, 2007). IAT research demonstrates that, in some cases, implicit attitudes may be more predictive of behavior than explicit attitudes (Cameron et al., 2012). It remains to be seen

whether implicit or explicit attitudes have the greatest influence on behaviors toward women described as involuntarily childless, childfree, and mothers.

Directions for Future Research

Future research should continue to explore the incidence and experience of involuntary childlessness and childfreedom in diverse populations. For instance, although the current study primarily assessed perceptions of women based on parental status, perceptions of involuntarily childless and childfree men remains an understudied area. Furthermore, the influence of racial group identification on perceptions of involuntarily childless and childfree women both within and beyond their respective communities remains an important area of research. Assessing additional intersections of parental status with gender identity, sexual orientation, disability status, and nationality would also be a fruitful area of inquiry. Future studies should also continue to explore how the terms that individuals in these populations use to describe themselves (e.g., childless vs. childfree) influence perceptions of others.

Additional research should also include more diverse participant populations. Considering the persistence of negative attitudes in younger, college-aged populations, analysis of older participant pools may reveal even more profound stigmatization of women of nonparental status. Participants with less education, and with varying socioeconomic statuses, nationalities, gender identities, sexual orientations, and disabilities statuses may also report differing attitudes toward involuntarily childless and childfree women. Additional research in populations with diverse religious affiliations, levels of religious commitment, and frequencies of religious activities could extend findings from the current study that religious affiliation was associated with several outcome measures. Finally, racial identification of participants could be an important line of research, as it may be associated with some types of negative perceptions (e.g., Negative Emotionality) over others (e.g., Interpersonal Warmth).

Furthermore, research could determine the impact of stigmatization of involuntarily childless and childfree women in multiple contexts. For example, more research is needed regarding the influence of involuntary childless and childfree status in the workplace, where these individuals may be required to work longer hours and less desirable shifts in favor of their parenting counterparts. Additionally, research could assess the influence of nonparental stigmatization in healthcare settings, including women's experiences of reproductive healthcare outside of childbearing and treatment by medical professionals when seeking voluntary sterilization. Other research could continue to explore the influence of nonparental stigma in interpersonal situations, including unfavorable reactions from friends and family members and the success of stigma management techniques.

Future studies should also continue to assess the theoretical mechanisms underlying negative perceptions of nonparental status. Analyses using Terror Management Theory (TMT) could determine if increased mortality salience and/or a reduced sense of symbolic immortality exacerbates negative attitudes toward women of nonparental status. These studies could also assess if priming with nonparental stimuli increases mortality salience and/or reduces symbolic immortality. Further studies could conduct a full assessment of the behaviors from intergroup affect and stereotypes (BIAS) map to confirm that women of varying parental statuses are recipients of the affective reactions and behaviors associated with ambivalent stereotyping. Future SCM studies could include additional parental status groups (e.g., foster parents, single mothers, surrogates, mothers with many children) and conduct cluster analyses to obtain a more nuanced picture of how parental status influences stereotyping. Other studies might examine if attributions of responsibility when deliberation of parenting choices is made salient underlie negative perceptions of and attitudes toward women without children. Finally, future research could evaluate if the distinctions between the terms "childless" and "childfree" become

meaningful only once individuals identify with those ingroups and otherwise remain insignificant to outgroups, such as is observed in the literature on racial group identification.

Regardless of the research focus, future studies should seek to use a variety of tools as they continue to examine involuntary childlessness and childfreedom. For instance, the ecological validity of findings could be improved by including techniques such as photographs, video, and staged in vivo experiences. Mixed research methods using sophisticated designs and statistical analyses could also provide a more complex understanding of the development and expression of attitudes toward involuntary childless and childfree individuals. Both quantitative and qualitative work with involuntarily childless and childfree populations would increase our understanding of the lived experiences of these individuals. Finally, the literature on attitudes toward involuntarily childless and childfree individuals could benefit from valid and reliable measures to assess these attitudes.

Conclusion

The current study investigated perceptions of women based on parental status. First, it explored perceived personality characteristics of women described as childless, childfree, and mothers. Significant findings confirmed persisting stigmatization of women who violate parenting norms and the continued influence of pronatalist values. Second, this study attempted to clarify perceptions of women at the intersection of race and parental status. Lack of significant findings suggested that negative perceptions of women without children may apply to women of all racial groups. Third, this study assessed women of varying parental statuses using framework from the Stereotype Content Model. Results confirmed that women described as childless, childfree, and mothers are ambivalently stereotyped. Mothers were rated significantly higher on Warmth than Competence, while childless and childfree women were rated significantly higher on Competence than Warmth. Fourth, the current study examined implicit

attitudes toward targets described as childless, childfree, and parents through the use of three newly-created Single-Category Implicit Association Tests. Implicit attitudes were positive toward parents and childfree individuals; however, neither positive nor negative bias was demonstrated toward childless individuals. Fifth, this study assessed implicit-explicit relations in attitudes toward targets described as childless, childfree, and parents. Although there was no evidence to suggest that implicit and explicit attitudes toward parents are related, implicit and explicit attitudes toward childless and childfree targets may represent related, yet distinct constructs. Finally, this study contributes new insight to the current literature on involuntary childlessness and childfreedom, and adds to the foundation from which future studies can evolve.

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Appendix A

Demographic Questionnaire

What is your age? ☐

What is your gender? Please check all that apply.

- □ Female
- □ Male
- □ Other – Please Specify: ☐

What is your race/ethnicity? Please check all that apply.

- □ African American/Black
- □ Asian/Pacific Islander
- □ Caucasian/White
- □ Hispanic/Latino/Latina
- □ Native American
- □ Other – Please Specify: ☐

What is your religious affiliation? Please check all that apply.

- □ Buddhist
- □ Christian
- □ Hindu
- □ Islamic
- □ Jewish
- □ Non-religious
- □ Other – Please Specify: ☐

What is your sexual orientation? Please check all that apply.

□ Heterosexual/Straight
□ Gay/Lesbian
□ Bisexual
□ Other – Please Specify: [ ]

What is your relationship status? Please check all that apply.

□ Single
□ In a relationship, not cohabitating
□ In a relationship, cohabitating
□ Married or in a domestic partnership
□ Separated/Divorced/Widowed
□ Other – Please Specify: [ ]

How many individuals are in your family of origin? (Note: only include immediate family members, such as parents and siblings)

[ ]

How many children do you currently have?

[ ]

If you do not have children already, do you intend to have children?

□ Yes □ No □ Not Certain

Appendix B

Personality Characteristic Rating Scale

Please rate the woman in the story for the following pairs of opposite characteristics. Select a value from 1 to 7 that best represents the woman for that characteristic. For example, a value of 1 would indicate that you think the woman is warm. In contrast, selecting a value of 7 would indicate that you think she is cold.

Ambitious			Neutral			Not Ambitious
1	2	3	4	5	6	7
□	□	□	□	□	□	□
Anxious			Neutral			Not Anxious
1	2	3	4	5	6	7
□	□	□	□	□	□	□
Career-Oriented			Neutral			Not Career-Oriented
1	2	3	4	5	6	7
□	□	□	□	□	□	□
Caring			Neutral			Uncaring
1	2	3	4	5	6	7
□	□	□	□	□	□	□

Competent			Neutral			Incompetent
1	2	3	4	5	6	7
□	□	□	□	□	□	□

Confident			Neutral			Not Confident
1	2	3	4	5	6	7
□	□	□	□	□	□	□

Determined			Neutral			Not Determined
1	2	3	4	5	6	7
□	□	□	□	□	□	□

Feels Inferior			Neutral			Does Not Feel Inferior
1	2	3	4	5	6	7
□	□	□	□	□	□	□

Feels Sorry For Self			Neutral			Does Not Feel Sorry For Self
1	2	3	4	5	6	7
□	□	□	□	□	□	□

Feminine			Neutral			Masculine
1	2	3	4	5	6	7
□	□	□	□	□	□	□

Happy			Neutral			Unhappy
1	2	3	4	5	6	7
□	□	□	□	□	□	□

Hardworking			Neutral			Not Hardworking
1	2	3	4	5	6	7
□	□	□	□	□	□	□

Kind			Neutral			Unkind
1	2	3	4	5	6	7
□	□	□	□	□	□	□
Likable			Neutral			Unlikable
1	2	3	4	5	6	7
□	□	□	□	□	□	□
Lonely			Neutral			Not Lonely
1	2	3	4	5	6	7
□	□	□	□	□	□	□
Materialistic			Neutral			Not Materialistic
1	2	3	4	5	6	7
□	□	□	□	□	□	□
Mature			Neutral			Immature
1	2	3	4	5	6	7
□	□	□	□	□	□	□
Nurturing			Neutral			Not Nurturing
1	2	3	4	5	6	7
□	□	□	□	□	□	□
Reliable			Neutral			Unreliable
1	2	3	4	5	6	7
□	□	□	□	□	□	□
Self-Centered			Neutral			Not Self-Centered
1	2	3	4	5	6	7
□	□	□	□	□	□	□

Sensitive			Neutral			Insensitive
1	2	3	4	5	6	7
□	□	□	□	□	□	□
Sincere			Neutral			Insincere
1	2	3	4	5	6	7
□	□	□	□	□	□	□
Stressed			Neutral			Not Stressed
1	2	3	4	5	6	7
□	□	□	□	□	□	□
Successful			Neutral			Unsuccessful
1	2	3	4	5	6	7
□	□	□	□	□	□	□
Success-Oriented			Neutral			Not Success-Oriented
1	2	3	4	5	6	7
□	□	□	□	□	□	□
Traditional			Neutral			Nontraditional
1	2	3	4	5	6	7
□	□	□	□	□	□	□
Warm			Neutral			Cold
1	2	3	4	5	6	7
□	□	□	□	□	□	□
Well-Adjusted			Neutral			Not Well-Adjusted
1	2	3	4	5	6	7
□	□	□	□	□	□	□

Appendix C

Stereotype Content Rating Scale for Mothers

When answering the following questions, we are not interested in your personal beliefs, but in how you think members of this group are viewed by others.

As viewed by society, how competent are mothers?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how sincere are mothers?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how confident are mothers?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how good-natured are mothers?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how capable are mothers?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how warm are mothers?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how efficient are mothers?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how trustworthy are mothers?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how intelligent are mothers?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how well-intentioned are mothers?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how skillful are mothers?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how friendly are mothers?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

Appendix D

Stereotype Content Rating Scale for Childless Women

When answering the following questions, we are not interested in your personal beliefs, but in how you think members of this group are viewed by others.

As viewed by society, how competent are childless women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how sincere are childless women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how confident are childless women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how good-natured are childless women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how capable are childless women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how warm are childless women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how efficient are childless women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how trustworthy are childless women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how intelligent are childless women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how well-intentioned are childless women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how skillful are childless women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how friendly are childless women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

Appendix E

Stereotype Content Rating Scale for Childfree Women

When answering the following questions, we are not interested in your personal beliefs, but in how you think members of this group are viewed by others.

As viewed by society, how competent are childfree women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how sincere are childfree women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how confident are childfree women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how good-natured are childfree women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how capable are childfree women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how warm are childfree women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how efficient are childfree women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how trustworthy are childfree women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how intelligent are childfree women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how well-intentioned are childfree women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how skillful are childfree women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

As viewed by society, how friendly are childfree women?

Not at all				Extremely
1	2	3	4	5
□	□	□	□	□

Appendix F

SC-IAT Sequences

Block	No. of Trials	Items assigned to left-key response	Items assigned to right-key response
Sequence #1			
1	24	Good words + Target$_a$	Bad words
2	72	Good words + Target$_a$	Bad words
3	24	Good words	Bad words + Target$_a$
4	72	Good words	Bad words + Target$_a$
Sequence #2			
1	24	Good words	Bad words + Target$_a$
2	72	Good words	Bad words + Target$_a$
3	24	Good words + Target$_a$	Bad words
4	72	Good words + Target$_a$	Bad words

*Table adapted from Karpinski & Steinman (p. 17, 2006)
a Targets were Parents, Childless, or Childfree

Appendix G

SC-IAT Stimuli

Good words	Bad words	Parent words	Childfree words	Childless words
Sunrise	War	Mother	Child-free	Child-less
Diamond	Theft	Father	Kid-free	Kid-less
Paradise	Murder	Baby	Baby-free	Baby-less
Peace	Evil	Infant	Infant-free	Infant-less
Flowers	Injury	Parent	Non-parent	Non-parent

Appendix H

Explicit Measure of Attitudes Toward Childlessness

Please indicate your level of agreement with the following statements. Select a value from 1 to 5. A value of 1 would indicate that you strongly disagree and a value of 5 would indicate that you strongly agree.

People who are childless are more likely to be lonely in their older years than persons who have had children.

Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1	2	3	4	5
□	□	□	□	□

Childless couples are more likely to lead empty lives than couples with children.

Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1	2	3	4	5
□	□	□	□	□

Childless marriages are more likely to end in divorce than are marriages where there are children.

Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1	2	3	4	5
□	□	□	□	□

A childless woman is likely to feel unfulfilled unless she becomes a mother.

Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1	2	3	4	5
□	□	□	□	□

Appendix I

Explicit Measure of Attitudes Toward the Childfree

Please indicate your level of agreement with the following statements. Select a value from 1 to 5. A value of 1 would indicate that you strongly disagree and a value of 5 would indicate that you strongly agree.

People who are childfree are more likely to be lonely in their older years than persons who have had children.

Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1	2	3	4	5
□	□	□	□	□

Childfree couples are more likely to lead empty lives than couples with children.

Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1	2	3	4	5
□	□	□	□	□

Childfree marriages are more likely to end in divorce than are marriages where there are children.

Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1	2	3	4	5
□	□	□	□	□

A childfree woman is likely to feel unfulfilled unless she becomes a mother.

Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1	2	3	4	5
□	□	□	□	□

Appendix J

Explicit Measure of Attitudes Toward Parents

Please indicate your level of agreement with the following statements. Select a value from 1 to 5. A value of 1 would indicate that you strongly disagree and a value of 5 would indicate that you strongly agree.

People who have children are more likely to be lonely in their older years than persons who have not had children.

Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1	2	3	4	5
□	□	□	□	□

Parents are more likely to lead empty lives than couples without children.

Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1	2	3	4	5
□	□	□	□	□

Marriages with children are more likely to end in divorce than are marriages where there are no children.

Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1	2	3	4	5
□	□	□	□	□

A woman is likely to feel unfulfilled unless she becomes a mother.

Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1	2	3	4	5
□	□	□	□	□

Appendix K

Evaluation Thermometer for Parents

Select a number between 0 and 100 to indicate your overall evaluation of parents.	
100˚	extremely favorable
90˚	very favorable
80˚	quite favorable
70˚	fairly favorable
60˚	slightly favorable
50˚	neutral
40˚	slightly unfavorable
30˚	fairly unfavorable
20˚	quite unfavorable
10˚	very unfavorable
0˚	extremely unfavorable

Appendix L

Evaluation Thermometer for Childless Individuals

Select a number between 0 and 100 to indicate your overall evaluation of childless individuals.	
100˚	extremely favorable
90˚	very favorable
80˚	quite favorable
70˚	fairly favorable
60˚	slightly favorable
50˚	neutral
40˚	slightly unfavorable
30˚	fairly unfavorable
20˚	quite unfavorable
10˚	very unfavorable
0˚	extremely unfavorable

Appendix M

Evaluation Thermometer for Childfree Individuals

Select a number between 0 and 100 to indicate your overall evaluation of childfree individuals.	
100˚	extremely favorable
90˚	very favorable
80˚	quite favorable
70˚	fairly favorable
60˚	slightly favorable
50˚	neutral
40˚	slightly unfavorable
30˚	fairly unfavorable
20˚	quite unfavorable
10˚	very unfavorable
0˚	extremely unfavorable

Appendix N

Written Vignettes Varying Race and Parental Status

1) Angela and Michael, a Black couple, are both 45 years of age. They have been married for 20 years and have two children. Angela has a successful and rewarding career, is involved with her extended family, and shares hobbies and interests with her husband, Michael.
2) Angela and Michael, a Black couple, are both 45 years of age. They have been married for 20 years and are childless. Angela has a successful and rewarding career, is involved with her extended family, and shares hobbies and interests with her husband, Michael.
3) Angela and Michael, a Black couple, are both 45 years of age. They have been married for 20 years and are childfree. Angela has a successful and rewarding career, is involved with her extended family, and shares hobbies and interests with her husband, Michael.
4) Angela and Michael, an Asian couple, are both 45 years of age. They have been married for 20 years and have two children. Angela has a successful and rewarding career, is involved with her extended family, and shares hobbies and interests with her husband, Michael.
5) Angela and Michael, an Asian couple, are both 45 years of age. They have been married for 20 years and are childless. Angela has a successful and rewarding career, is involved with her extended family, and shares hobbies and interests with her husband, Michael.

6) Angela and Michael, an Asian couple, are both 45 years of age. They have been married for 20 years and are childfree. Angela has a successful and rewarding career, is involved with her extended family, and shares hobbies and interests with her husband, Michael.
7) Angela and Michael, a White couple, are both 45 years of age. They have been married for 20 years and have two children. Angela has a successful and rewarding career, is involved with her extended family, and shares hobbies and interests with her husband, Michael.
8) Angela and Michael, a White couple, are both 45 years of age. They have been married for 20 years and are childless. Angela has a successful and rewarding career, is involved with her extended family, and shares hobbies and interests with her husband, Michael.
9) Angela and Michael, a White couple, are both 45 years of age. They have been married for 20 years and are childfree. Angela has a successful and rewarding career, is involved with her extended family, and shares hobbies and interests with her husband, Michael.
10) Angela and Michael, a Hispanic couple, are both 45 years of age. They have been married for 20 years and have two children. Angela has a successful and rewarding career, is involved with her extended family, and shares hobbies and interests with her husband, Michael.
11) Angela and Michael, a Hispanic couple, are both 45 years of age. They have been married for 20 years and are childless. Angela has a successful and rewarding career, is involved with her extended family, and shares hobbies and interests with her husband, Michael.
12) Angela and Michael, a Hispanic couple, are both 45 years of age. They have been married for 20 years and are childfree. Angela has a successful and rewarding career, is

involved with her extended family, and shares hobbies and interests with her husband, Michael.

Vita

Annalucia Bays was born on September 21, 1980, in Honolulu, Hawaii, and is a citizen of both the United States and Canada. She graduated from Bruton High School in Williamsburg, Virginia in 1998. Before returning to college to finish her undergraduate education, she held several professional positions in which she managed retail and food service venues, planned events, and directed sales and marketing. She received her Bachelor of Science in Psychology with a minor in Sociology from Christopher Newport University in May 2012. That same year, she began studying at Virginia Commonwealth University (VCU) in the counseling psychology doctoral program. In addition to her studies, Annalucia is currently a teaching assistant for applied statistics and a therapist at the Center for Psychological Services and Development at VCU.