A LIFE HISTORY APPROACH TO PERFECTIONISM

A Thesis
by
HADLEY CAITLIN BROCHU

Submitted to the Graduate School
at Appalachian State University
in partial fulfillment of the requirements for the degree of
MASTER OF ARTS

May 2019
Department of Psychology

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Abstract

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Life history theory is an evolution-based theory that outlines the differences in species' behaviors related to growth and reproduction. Recently, the theory has been applied to explain the differences in human motivations and behaviors. Fast-spectrum life history strategies are associated with impulsive, risky behavior, while slow-spectrum life history strategies are associated with cautious, conscientious, risk aversive behaviors. Perfectionism is a personality trait characterized by two dimensions: perfectionistic strivings and self-evaluative perfectionism. To date, it is unclear whether these dimensions of perfectionism are slow-spectrum or fast-spectrum traits. However, the dimensions of perfectionism have each exhibited an association with careful, conscientious decision-making, as well as high standards for performance; thus, it was hypothesized that high scores on both dimensions of perfectionism would be associated with slow life history strategies and related indicators. Participants consisted of 287 individuals (42.8% male, 57.2% female) from the general United States population who completed self-report questionnaires (via MTurk) related to their overall life history

strategies, related specific traits (i.e., sociosexuality, future discounting, delayed gratification), and perfectionism. Consistent with expectations, a general measure of slow life history strategy, the Mini-K, was correlated with perfectionistic strivings perfectionism, but contrary to expectations, was not correlated with self-evaluative perfectionism. Multiple regression analyses that controlled for gender indicated that the Mini-K and sociosexuality together accounted for 8% of variance in perfectionistic strivings perfectionism, although only the Mini-K significantly contributed to the regression equation. The results of the present study provided insight into the extent to which life history strategy predicts each domain of perfectionism, and indicated that life history strategy predicts perfectionistic strivings perfectionism but does not predict self-evaluative perfectionism.

Acknowledgments

I would like to acknowledge everyone who has played a role in my academic accomplishments. First of all, I'm grateful to my family members, who have supported me throughout my life and academic career. Without that support, I would not have achieved the level of success that I have. Secondly, I would like to thank my advisor, Dr. Hill, and the rest of my thesis committee members, each of whom has provided guidance throughout the process. Thank you all for your patience and unwavering support.

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Foreword

This thesis is written in accordance with the style guidelines presented in the *Publication Manual of the American Psychological Association (6th Edition)* in line with the requirements of the Department of Psychology at Appalachian State University.

A Life History Approach to Perfectionism

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Abstract

Life history theory is an evolution-based theory that outlines the differences in species' behaviors related to growth and reproduction. Recently, the theory has been applied to explain the differences in human motivations and behaviors. Fast-spectrum life history strategies are associated with impulsive, risky behavior, while slow-spectrum life history strategies are associated with cautious, conscientious, risk aversive behaviors. Perfectionism is a personality trait characterized by two dimensions: perfectionistic strivings and self-evaluative perfectionism. To date, it is unclear whether these dimensions of perfectionism are slow-spectrum or fast-spectrum traits. However, the dimensions of perfectionism have each exhibited an association with careful, conscientious decision-making, as well as high standards for performance; thus, it was hypothesized that high scores on both dimensions of perfectionism would be associated with slow life history strategies and related indicators. Participants consisted of 287 individuals (42.8% male, 57.2% female) from the general United States population who completed self-report questionnaires (via MTurk) related to their overall life history strategies, related specific traits (i.e., sociosexuality, future discounting, delayed gratification), and perfectionism. Consistent with expectations, a general measure of slow life history strategy, the Mini-K, was correlated with perfectionistic strivings perfectionism, but contrary to expectations, was not correlated with self-evaluative perfectionism. Multiple regression analyses that controlled for gender indicated that the Mini-K and sociosexuality together accounted for 8% of variance in perfectionistic

strivings perfectionism, although only the Mini-K significantly contributed to the regression equation. The results of the present study provided insight into the extent to which life history strategy predicts each domain of perfectionism, and indicated that life history strategy predicts perfectionistic strivings perfectionism but does not predict self-evaluative perfectionism.

A Life History Approach to Perfectionism

Life history theory is an evolution-based theory used to explain mating behaviors and the allocation of time and energy among species (Charnov, 1993; Ellis, Figueredo, Brumbach, & Schlomer, 2009). The theory has also been utilized to explain differences *within* species, including humans (Belsky, Steinberg, & Draper, 1991; Bogaert & Rushton, 1989). "Fast-spectrum" individuals are characterized by impulsivity, recklessness, and short-term decision making, while "slow-spectrum" individuals are characterized by conscientiousness and long-term decision making (Wolf, van Doorn, Leimar, & Weissing, 2007). The current study aimed to utilize this theory to gain a more nuanced understanding of perfectionism. Perfectionism is a multidimensional trait that has been associated with both adaptive (i.e., strong academic performance) and maladaptive (i.e., anxiety, depression, eating disorders) outcomes (Huey & Weisz, 1997; Stoeber & Kersting, 2007; Westen & Harnden-Fischer, 2001). The current examination of the factors of perfectionism from an evolutionary perspective was conducted in an effort to better understand the extent to which each dimension of perfectionism relates to the life history framework.

Background of Life History Theory

Life history theory is an evolution-based theory initially developed to explain differences in time and energy put towards somatic and reproductive efforts (Charnov, 1993; Ellis et al., 2009; Kaplan & Gangestad, 2005). Somatic efforts include energy devoted to growth, survival, body maintenance, and developmental activity (Geary, 2002). Reproductive efforts include mating efforts (finding mates and conceiving

offspring), parenting efforts (investing resources in previously conceived offspring), and nepotistic efforts (investing energy in the care of other relatives; Geary, 2002).

Life history strategies involve decisions regarding the allocation of energy. When an organism delays reproduction, it may be to accumulate resources and increase the quality of life for future offspring; however, it risks dying before reproducing. An organism decides between reproducing fewer times and investing more in individual offspring as a parent (thus increasing quality over quantity) or reproducing many times, which may result in lower quality offspring due to less parental investment and divided resources. While less reproduction may lead to better future prospects for those fewer descendants, fitness gains are achieved in the production of numerous offspring due to a greater number of offspring having been born with that organism's genetic material, despite a reduced likelihood of longevity for each offspring (Ellis et al., 2009; Reale et al., 2010). While this framework is used to assess differences between species, it may also be utilized to explain differences between individuals of the same species (Reale et al., 2010).

Life history trade-offs are not independent of each other, so life history strategies are represented on a continuum, referred to as the *fast-slow continuum of life history variation* (Ellis et al., 2009; Jeschke & Kokko, 2009). Species on the fast end of the continuum prioritize short-term gain over long-term gain. These species experience fast growth and early and frequent reproduction, which correlate with shorter lifespan and fewer offspring of high quality. Alternatively, those on the slow end of the spectrum pursue future gain over immediate gain. They experience slow growth and late, infrequent reproduction, associated with longer lifespan, as well as greater opportunities

and improved outcomes for offspring, due to increased parental investment (Wolf et al., 2007).

Life history strategies are influenced by both environmental and genetic factors (Leimar, Hammerstein, & Van Dooren, 2006; McNamara & Houston, 1996). The primary environmental factors that contribute to the development of life history strategies are resource availability, external stressors that affect one's longevity and mortality, and unpredictability of environmental cues (Kuzawa & Bragg, 2012). Fast-spectrum species may respond better to environments with higher morbidity and mortality, less resource availability, and high unpredictability, as immediate gains are the most reliable and beneficial in these environments. Alternatively, slow-spectrum species often exist in environments with high resource availability, low morbidity and mortality, and low unpredictability, thus providing the security necessary for the prioritization of long-term gains (Ellis et al., 2009).

The Application of Life History Strategies to Humans

While human beings as a whole are classified as a slow-spectrum species, the life history theory may be applied to explain differences within humans (Belsky et al., 1991; Bogaert & Rushton, 1989). For example, studies indicate that factors such as harsh parenting, insecure attachment, and tense family environments correlate with greater impulsivity, earlier sexual maturation, and increased exploitative behavior. This supports the theory that unstable environments are associated with the development of fast-spectrum traits (Belsky, 2012; James, Ellis, Schlomer, & Garber, 2012) and the idea that individuals determine which behaviors will maximize their fitness in a given environment and act accordingly (McNamara & Houston, 1996).

The Arizona Life History Battery (ALHB; Figueredo, Vásquez, Brumbach, & Schneider, 2007) is the largest and seemingly most comprehensive measure utilized in previous investigations to assess one's life history strategy. It is a battery of cognitive and behavioral indicators of life history strategy that converge to represent the K-factor, which is considered to be a general indicator of slow life history strategy (Figueredo et al., 2005). The K-factor consists of various characteristics and behaviors, including good executive functions, positive relationships with one's parents, positive attachment to an adult partner, low mating effort, low Machiavellianism, low levels of risk taking, more foresight and planning, as well as persistence and self-directedness (Figueredo et al., 2005). Those that exhibit many or most of these traits and behaviors are considered to align with the slow-spectrum life history strategy.

Sociosexuality relates to life history strategy as a component of mating behavior that reflects one's willingness to engage in sexual activity outside of a committed relationship. This trait is influenced by numerous components, including mate availability and one's sex (Arnocky, Woodruff, & Schmitt, 2016; Buss, 2003; Buss & Schmitt, 1993; Schmitt, 2003). Men have typically been found to exhibit greater unrestricted sociosexuality than women in shorter-term circumstances, but of note, these differences were not as pronounced when a more nuanced measurement of sociosexuality, including long-term relationships, was utilized (Clark & Hatfield, 1989; Jackson & Kirkpatrick, 2007; Schmitt, 2003). McDonald, Donnellan, and Navarrete (2012) found associations between sociosexuality and fast-spectrum traits. The underlying attributes that link sociosexuality to fast life history strategy are a lack of self-control and a willingness to use others for gain (McDonald et al., 2012). Similarly, Dunkel, Summerville, Mathes,

and Kesselring (2015) found life history theory to be associated with all reproductive behaviors they measured (including number of sexual partners, frequency of intercourse, number of abortions, and age at birth of first child). These findings support what is considered the cornerstone of the life history theory: that fast-spectrum individuals exhibit less inhibition in mating behaviors than slow-spectrum individuals (Charnov, 1993). However, it should be noted that there are some inconsistencies, such as the finding by Krupp (2012) that life history strategy was not predictive of number of abortions in a sample of Canadian individuals ranging from age 15 to over 50. Additionally, some researchers have found sexuality and mating behaviors to be more nuanced, positing that rather than simply slow and fast behaviors, there are four types, with the additional types being those that exhibit both fast and slow mating and sexual behaviors, as well as those that exhibit neither (Holtzman & Senne, 2014). Finally, mating behaviors have also been shown to be related to early life experiences (i.e., stability of family environments), as Manvelian and Metz (2016) found that women who endorsed slower life history strategies and greater stability during upbringing (i.e., presence of father during childhood) endorsed greater attraction to male faces with features associated with greater parental investment (i.e., "soft traits," such as perceived warmth in facial expression, that lead him to be perceived as trustworthy, caring, kind, and supportive), rather than those associated with greater testosterone and genetic quality (i.e., facial hair, enlarged cheekbones, defined jaw).

Future discounting is one's tendency to discount future gain for present gain, while delaying gratification is one's tendency to prioritize long-term gain. These relate closely to one's life history strategy, as they directly influence behaviors such as mating

strategy. For example, women historically have delayed sexual gratification more than men, due to the need to select high quality mates to provide for their children, and to inhibit maladaptive sexual and social responses (Bjorklund & Kipp, 1996). The inability to delay gratification, and the tendency to discount future gain, have been associated with a fast spectrum life history strategy (Wolf et al., 2007).

Additionally, life history strategies correlate with personality traits. Personality traits are relatively stable and reflect an individual's motivation, behavioral tendencies, and ability to self-regulate. Studies show that certain traits on the Five Factor Model of personality (Costa & McCrae, 1995) are associated with certain types of life history strategists. Specifically, individuals high in agreeableness and conscientiousness often exhibit slow spectrum traits, such as restricted sociosexuality, risk aversion, and relationship stability (Holtzman & Strube, 2013). Sociosexuality relates to mating strategy and captures the tendency of an individual to pursue uncommitted sexual relationships. Personality traits, such as openness to experience and extraversion, correlate, to some degree, with characteristics of the fast-spectrum life history strategy including promiscuous behavior, short-term mating, impulsive and disruptive behavior, and relationship instability (Del Giudice, 2012). However, extraversion and openness to experience are not entirely fast spectrum traits, as they also correlate with some slow spectrum characteristics, like warmth and affiliation (Lucas, Deiner, Grob, Suh, & Shao, 2000). In contrast, openness to experience and extraversion are typically predictive of sensation seeking behavior and lack of self-regulatory abilities, linking them primarily to the fast-spectrum life history strategy (Del Giudice, 2012). Further, in an examination of the relationships between HEXACO personality traits and life history strategy, Strouts,

Brase, and Dillon (2017) found extraversion and conscientiousness to be the personality traits most strongly related to mating-relevant characteristics and strategies. Lastly, in a sample of high school students, emotional intelligence was found to be associated with slow life history strategy, further supporting differences in individuals that endorse slow and fast life history strategies (van der Linden, van Klaveren, & Dunkel, 2015).

Perfectionism

The current study examined life history strategies as they pertain to the multidimensional personality trait of perfectionism. Perfectionism is a multifaceted personality trait that is characterized by the pursuit of extremely high standards, the desire for flawlessness in all domains of life, and an excessive amount of self-criticism (Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt & Flett, 1991). Perfectionism has been associated with numerous outcomes, including anxiety, eating disorders, depression, suicide risk, and strong athletic and academic performance (Egan, Wade, & Shafran, 2011; Hewitt & Flett, 1991). Therefore, while perfectionism is correlated with some positive outcomes, it is primarily associated with maladaptive outcomes, including mental disorders. Perfectionism is typically assessed as a multidimensional trait to better understand which specific aspects predict positive and negative outcomes.

Perfectionism however, was not always considered multidimensional and thus, was not associated with positive outcomes in earlier studies. Rather, in the 1980s, it had primarily been associated with psychopathology. At that point in time, perfectionism was viewed uni-dimensionally, and it was considered dysfunctional and similar to neuroticism (i.e., chronic distress that results in difficulty experiencing pleasure) (Burns, 1980). However, in the 1990's, two research groups separately illustrated the multidimensional

nature of perfectionism. Frost and colleagues (1990) suggested that perfectionism has six facets: Personal standards, organization, concern over mistakes, doubts about actions, parental expectations, and parental criticism. Hewitt and Flett (1991) proposed three facets of perfectionism: Self-oriented, socially prescribed, and other-oriented. While the models appeared to differ in many ways, they had similarities in the underlying dimensions. Frost, Heimberg, Holt, Mattia, and Neubauer (1993) found perfectionism to have two significant second order factors, including one that captured personal standards, organization, self-oriented perfectionism, and other-oriented perfectionism (Burgess, Frost, & DiBartolo, 2016; Frost et al., 1993). The second factor captured concern over mistakes, doubts about actions, socially prescribed perfectionism, parental expectations, and parental criticism. These two factors have been termed "positive strivings," and "maladaptive evaluation concerns" (Stoeber & Otto, 2006).

Hill and colleagues (2004) developed the Perfectionism Inventory (PI), which expanded upon the multidimensional understanding of perfectionism brought forth by Hewitt and Flett (1991) and Frost and colleagues (1990). The purpose of the development of the PI was to create a more comprehensive measurement than had been developed, to eliminate redundancy involved in using multiple measures and to further explore the factors that comprise perfectionism (Hill et al., 2004). The PI consists of two higher-order perfectionism factors: Conscientious Perfectionism and Self-Evaluative Perfectionism. The factor termed Conscientious Perfectionism has often been labeled as High Personal Standards or Perfectionistic Strivings. Perfectionistic strivings perfectionism is driven by the internal desire to be perfect and achieve high standards, while self-evaluative perfectionism is motivated by concern over flaws and the belief that others expect

perfection (Hill et al., 2004). Perfectionistic strivings perfectionism is composed of several traits: High standards for others, organization, planfulness, and striving for excellence. Self-evaluative perfectionism is also composed of multiple traits: Concern over mistakes, need for approval, perceived parental pressure, and rumination.

Features of perfectionistic strivings perfectionism, such as striving for excellence and organization, are moderately correlated with some positive life outcomes, such as life satisfaction, psychological well-being, and positive affect (Gotwals, Stoeber, Dunn, & Stoll, 2012; Hill, Huelsman, & Araujo, 2010; Longbottom, Grove, & Dimmock, 2010). Alternatively, concern over mistakes, high standards for others, rumination, perceived parental pressure, and need for approval moderately correlate with negative life outcomes, such as depression, stress, and anxiety (Enns, Cox, & Clara, 2002; Kawamura, Hunt, Frost, & DiBartolo, 2001; McGirr & Turecki, 2009; Smith, Saklofske, & Yan, 2015). Additionally, overlap exists between these components of perfectionism, as striving for excellence is also moderately associated with negative emotionality (Stoeber & Otto, 2006).

Perfectionism and Life History Strategy

Little research exists on the association between perfectionism and life history strategies, so it remains undetermined whether the different facets of perfectionism are fast- or slow-spectrum traits. Perfectionistic strivings perfectionism contains qualities and traits that are consistent with slow-spectrum traits, as one's ability to achieve high standards requires organization, planning, and attention to detail. Additionally, self-evaluative perfectionism is associated with concern over others' perceptions, concern over one's flaws, and others' expectation of perfection. This type of perfectionism is

consistent with a slow life history strategy as well, as it relates to traits such as conscientiousness and social compliance (Del Giudice, 2014). Self-evaluative perfectionism is also theoretically consistent with slow-spectrum concerns, such as careful mating strategy, avoiding social rejection, and losing status, as examples of an interest in prioritizing long-term over short-term gains. Therefore, both factors of perfectionism might be expected to more closely relate to the characteristics of a slow life history strategy.

Additionally, while the associations between life history strategy and dimensions of perfectionism have not been specifically examined, dimensions of perfectionism and life history strategy have each been shown to exhibit associations with constructs such as the Behavioral Approach System (BAS) and the Behavioral Inhibition System (BIS). Both of these models are based in Reinforcement Sensitivity Theory, which was developed to explain differences in avoidance- and approach-related behaviors (Corr, 2008). In a study conducted by Krupić, Banai, and Corr (2018) that utilized self-report measures of BAS and life history theory, it was found that aspects of life slow history strategy (i.e., insight, planning, and control) were highly correlated with components of BAS (i.e., Reward Interest, Goal Drive Persistence, and Reward Reactivity; Krupic et al., 2018). Further, relational aspects of slow life history strategy (i.e., social contact and support) also correlated with Reward Interest and Reward Reactivity (Krupic et al., 2018). In a study of perfectionism and BAS in an undergraduate sample, Mautz, Hill, Huelsman, & Bazzini (2017) found that BAS was more strongly associated with perfectionistic strivings perfectionism, while the Behavioral Inhibition System (BIS) was more strongly related to self-evaluative perfectionism. These findings were supported by

additional studies that indicated that self-oriented perfectionism (i.e., unrealistic standards for the self, perfectionistic motivation for the self) was significantly associated with BAS traits, including Reward Interest, Goal Drive Persistence, and Reward Reactivity, while socially-prescribed perfectionism (i.e., the belief that significant others expect oneself to be perfect) was associated with behavioral inhibition, as well as trait rumination (Randles, Flett, Nash, McGregor, & Hewitt, 2010; Stoeber & Corr, 2015). Together, these findings indicate that slow life history strategy and perfectionistic strivings perfectionism are associated with BAS. Conversely, self-evaluative perfectionism is related to BIS. These findings lend support for a potential association between perfectionistic strivings perfectionism and slow life history strategy but leaves the relationship between self-evaluative perfectionism and slow life history to be more ambiguous. However, given that aspects of behavioral inhibition are more similar to aspects of slow, rather than fast, life history strategy, it is likely that self-evaluative perfectionism might also exhibit an association with slow life history strategy in the current study.

Previous studies also indicate a relationship between slow life history strategy and strong executive functioning skills. Given the relevance of executive functioning skills to perfectionistic strivings perfectionism, these shared associations might suggest a potential association between slow life history strategy and this dimension of perfectionism. Figueredo, Cuthbertson, Kauffman, Weil, and Gladden (2012) conducted a study examining the relationships between executive functioning, emotional intelligence, and life history strategy. The sample consisted of 527 female undergraduate students who completed self-report questionnaires related to life history (i.e., Arizona Life History

Battery, Multidimensional Sociosexual Orientation Inventory Short- and Long- Term Mating Scales), executive functioning (i.e., Behavioral Regulation Scales of the Behavior Rating Inventory of Executive Function- Adult version), and emotional intelligence (i.e., Trait Emotional Intelligence Questionnaire). Findings suggested that executive functioning, which consists of a set of cognitive processes (i.e., inhibiting prepotent responses, shifting mental tasks, updating working memory) that support future oriented, goal-directed behavior are associated with a slow life history strategy (Figueredo et al., 2012). Given that aspects of perfectionistic strivings perfectionism (i.e., planning, organization, striving for excellence) are also associated with strong executive functioning skills, as evidenced by stronger academic performance and aptitude test performance (Stoeber & Kersting, 2007; Stoeber & Otto, 2006) this findings provides further support for the hypothesis that perfectionistic strivings perfectionism might be associated with slow life history strategy. It is unclear the extent to which strong executive functioning skills are associated with self-evaluative perfectionism as this is an understudied area. Self-evaluative perfectionism is a less goal- and future-oriented type of perfectionism, suggesting that executive functioning skills might not have the same utility that they have for those that exhibit perfectionistic strivings perfectionism.

Current Study

The purpose of the present study was to examine the relationship between the two factors of perfectionism and life history strategies. This was assessed by examining the relationships between perfectionistic strivings and self-evaluative perfectionism and variables associated with life history strategy including the K-factor (slow life history), sociosexuality, future discounting, and delayed gratification.

Perfectionistic strivings perfectionism is characterized by the internal desire to achieve perfection and achieve high standards, while self-evaluative perfectionism is driven by the fear of flaws and belief that others expect perfection. It was hypothesized that both dimensions of perfectionism would be associated strongly with slow-spectrum life strategy demonstrated by a high score on the Mini-K, a general measure of slow life history strategy, as well as high scores on a measure of delayed gratification, and low scores on measures of sociosexuality and future discounting.

Method

Participants and Procedure

Participants for this investigation were drawn from Amazon's Mechanical Turk (MTurk), a web-service intended to provide human feedback on various tasks. MTurk data have been shown to represent the United States population well, be diverse, provide quality participation despite low compensation rates, and be at least as reliable as data from various other sources (Buhrmester, Kwang, & Gosling, 2016). Data from 332 participants were collected; some data were eliminated due to incomplete (n = 40) or invalid (n = 5; see Infrequency section below, p.22) responses. Thus, the final sample consisted of 287 participants (42.9% male, 57.1% female), with ages ranging from 20-83 years (M = 40.4, SD = 13.1). The sample was also approximately racially representative of the United States (7% African American, 4.5% Asian, 80.8% Caucasian, 4.9% Hispanic/Latino, 2.8% Other; United States Census Bureau, 2018). The distribution of annual income was as follows: 12.9% earned less than $10,000; 20.2% earned between $10,000 and $25,000; 31.0% earned between $25,000 and $50,000; 19.9% earned between $50,000 and $80,000; and 16.0% earned greater than $80,000. Regarding marital

status, 35.5% identified as single (never married), 48.4% as married/partnered, 14.3% as divorced/separated, and 1.7% as widowed. Finally, the mean duration of romantic relationships was 50.42 months (*SD* = 46.17, range = 0 – 215).

The Institutional Review Board approved the study on May 25, 2015 (IRB 15-0237; Closed; see Appendix A). The study was listed as a study of personality, and individuals interested in participating in the study selected it from the Amazon MTurk website. Once participants selected and registered to partake in the present study, they were redirected to an electronic survey. Prior to participating in the survey, participants granted informed consent, including an explanation of the study, contact information for principal researchers, information about compensation and instructions that proceeding to the study would be interpreted as informed consent to participate (see Appendix B). After providing informed consent, individuals were asked to endorse English proficiency by indicating whether English is their first language. Provided that they did so, they were directed to a self-report survey, in which they were asked to provide responses to the measures and also to provide demographic information. Participants were required to complete the online survey (see Appendices C-I) in a single session that lasted approximately 20-30 minutes. No identifying information from the participants was collected. Upon completion of the survey, participants were compensated $0.50 through Amazon's MTurk service.

Measures

Demographic Data. Demographic data (see Appendix C) were collected via self-report. This included questions pertaining to the participants' age, gender, race, marital status, duration of romantic relationships, and annual income.

Life History Strategy Indicators. The *Mini-K Life History Strategy Short Form* (Mini-K; Figueredo et al., 2006; see Appendix D) was used to assess participants' life history strategy. It is a 20-item short form of the Arizona Life History Battery (ALHB; Figueredo et al., 2007), which is a battery of cognitive and behavioral indicators of life history strategy compiled and adapted from various original sources. The Mini-K measures facets of life history strategies, as specified by life history theory, and converges upon a single multivariate latent construct, the "slow" factor. The measure is scored directionally to indicate a slow life history strategy on the *fast-slow continuum*. In a series of psychometric studies, Figueredo and his colleagues (e.g., Figueredo et al., 2005; 2006) have shown that a slow life history strategy can be conceptualized as a higher order construct characterized by a number of reproductive, parental and sexual behaviors, including good executive functions, positive relationships with one's parents, positive attachment to an adult partner, low mating effort, low Machiavellianism, low levels of risk taking, more foresight and planning, and persistence and self-directedness. The Mini-K correlates .85 with the full ALHB (Gladden, Sisco, & Figueredo, 2008), and uses a 5-point Likert scale, which ranges from 1 (disagree strongly) to 5 (agree strongly). Scores are calculated by summing the items, and higher scores are indicative of greater endorsement of a slow life history strategy. Cronbach's alpha was reported to be .73 in a previous investigation (Figueredo et al., 2014) and was .84 in the current investigation.

Future discounting was measured by two types of questions that assess willingness to take risk (Griskevicius, Tybur, Delton, & Robertson, 2011; see Appendix E). Each type of question involved a series of dichotomous financial choices between a certain outcome and a riskier outcome (e.g., Rachlin, Raineri, & Cross, 1991). The first

type of question included financial risk (i.e., “Do you want a 50% chance to get $600 OR $100 for sure?”). The dollar amount to be received with certainty remained the same, but the dollar amount of the riskier choice decreased by increments of $100. The second type of question involved temporal delay in order to achieve optimal financial gain (i.e., “Do you want $100 tomorrow OR $150 in 90 days?”). The dollar amount to be received in the riskier choice decreased by $10 in each question. Responses for each of the two types of questions were combined into a risk index. It consisted of the total number of times a participant chose the riskier, uncertain option (which could range from 0 to 10 times). This means that the higher the number, the more times a participant chose the riskier option, indicating a higher preference for risk. No reliability data from previous investigations are available for this set of items. Cronbach’s alpha was .78 in the current investigation.

The *Delaying Gratification Inventory* (DGI; Hoerger, Quirk, & Weed, 2011; see Appendix F) is a 35-item measure that was utilized to assess individual differences in the tendency to forego immediate satisfaction in an effort to attain long-term rewards. The DGI comprises five domains of delay behavior: eating behavior (e.g., “If my favorite food were in front of me, I would have a difficult time waiting to eat it”); physical pleasures (e.g., “I prefer to explore the physical side of romantic involvements right away”); social behavior (e.g., “I do not consider how my behavior affects other people”); money management (e.g., “I try to spend my money wisely”); and achievement behavior (e.g., “I cannot motivate myself to accomplish long-term goals”). A 5-point Likert scale was utilized, ranging from 1 (strongly disagree) to 5 (strongly agree). The items are summed to obtain a composite score (maximum score = 175, range = 35-175). A higher

DGI score indicates more difficulty with delay behavior. Cronbach's alpha of the composite was reported to be .91 in a previous investigation, with alphas of .75, .71, .81, .89, and .85 for the Food, Physical, Social, Money, and Achievement subscales, respectively (Hoerger et al., 2011). Cronbach's alphas of the composite and the Food, Physical, Social, Money, and Achievement subscales in the current investigation were .52, .12, .10, .50, .15, and .42, respectively.

The *Sociosexual Orientation Inventory* (SOI; Simpson & Gangestad, 1991; see Appendix G) is a 7-item self-report inventory that was used to assess one's endorsement of an unrestricted sociosexual orientation (i.e., the endorsement of casual sex). Examples of items include, "How many different partners do you foresee yourself having sex with during the next 5 years?" and "Sex without love is OK." The first three items require open-ended responses, whereas the fourth item requires selecting a response from eight choices, and the final three questions utilize a 9-point Likert scale ranging from 1 (strongly disagree) to 9 (strongly agree). Scores are summed, and higher scores reflect greater unrestricted sociosexuality. The minimum possible score is 4, and given the open-ended nature of some items, there is no maximum score. Data from a previous study yielded the following psychometric proprieties: internal consistency, $\alpha = .83$ and test–retest reliability, $r = .94$ (Penke & Asendorpf, 2008). Cronbach's alpha in the current investigation was .74.

Perfectionism. The *Perfectionism Inventory* (PI; Hill et al., 2004; see Appendix H) was used to measure the type and extent of participants' perfectionistic tendencies. It is a 59-item measure comprising eight subscales. A 5-point Likert scale is utilized, ranging from 1 (strongly disagree) to 5 (strongly agree). The Conscientious (or

Perfectionistic Strivings) Perfectionism composite score is derived from the sum of the following scales: Organization, Striving for Excellence, Planfulness, and High Standards for Others. The Self-Evaluative Perfectionism composite score is derived from the sum of the following scales: Concern over Mistakes, Need for Approval, Rumination, and Perceived Parental Pressure. All PI scales have good variability and clear unidimensional structures, as reflected in exploratory principal components analyses, confirmatory factor analysis, and internal consistency estimates that range from $\alpha = .75$ to $\alpha = .91$. Data from previous studies yielded test–retest correlations for the eight PI scales ranged from .71 to .91 over four to five weeks in a previous investigation (Hill et al., 2004). Cronbach's alphas of the Self-Evaluative and Perfectionistic Strivings scales in the current investigation were .95 and .90, respectively.

Infrequency. *The Infrequency Scale for Personality Measure* (ISPM; see Appendix I) is a 13-item scale that was embedded among other measures to ensure the valid responding of participants. An endorsement of any item of the measure is extremely unlikely (e.g., "I cannot remember when I talked with someone who wore glasses") and indicates a potentially invalid response style. To maintain consistency with how the ISPM has been used in previous studies, endorsement of three or more items on the ISPM indicates invalid responding and excluded the participant from analyses (Hundt, Kimbrel, Mitchell, & Nelson-Gray, 2008).

Results

Descriptive Statistics

Means, standard deviations, zero-order correlations, and internal consistency reliabilities for study scales are presented in Table 1. All variables were normally

distributed except Sociosexual Orientation Inventory, skewness = 3.01 (*SE* = .14) and kurtosis = 13.94 (*SE* = .29). Data for the Sociosexual Orientation Inventory yielded a significantly higher mean that of a previous study using an adult sample within the United States (Simpson & Gangestad, 1991; see Table 2). Data for the Self-Evaluative scale of the Perfectionism Inventory are generally consistent with a study utilizing an adult sample within the United States (Hill, et al., 2004; see Table 2). However, the mean score on the Perfectionistic Strivings scale was significantly higher than that reported in the same study (Hill et al., 2004; see Table 2). The mean score on the Mini-K was significantly higher than that found in a previous study utilizing an adult sample within the United States (Olderbak, Gladden, Wolf, & Figueredo, 2014; see Table 2). Additionally, the internal consistency reliabilities for the composite and subscales of the Delaying Gratification Inventory were unacceptably low, indicating that the scale lacks adequate internal consistency (see Table 1). Comparative data for the Future Discounting measure are not available, but the scale exhibited adequate internal consistency reliability.

Between-subjects *t*-tests were conducted to examine between-group differences of life history and perfectionism indicators, based on participants' sex, given the differences in life history strategy between sexes illustrated in previous studies (Mealy, 2000). Results are presented in Table 3. Women ($M = 55.97$, $SD = 50.50$) reported significantly lower scores on the Sociosexual Orientation Inventory than men ($M = 80.25$, $SD = 61.19$), $t(285) = 3.68$, $p < .001$, based on a Bonferroni adjusted p-value of $p = .006$, which was calculated by dividing an alpha of .05 by nine tests. Additionally, women ($M = 6.87$, $SD = 2.56$) reported significantly higher scores on the Future Discounting measure,

compared to men (M = 5.85, SD = 2.65), $t(285) = -3.23$, p = .001). Taken together, these results suggest that women exhibit more restricted sociosexuality but greater willingness to make financially risky decisions as compared to men.

Two one-way ANOVAs were conducted utilizing a Bonferroni adjusted critical value of p = .006 (Table 4). The first one-way ANOVA was conducted to examine the effect of marital on participants' scores on the Mini-K, Delaying Gratification Inventory, Sociosexual Orientation Inventory, and Future Discounting measure. This analysis was completed due to the previously discussed variation in life history strategy based on relationship status and sexual behaviors. Results indicated no significant effects of marital status on scores on any of the aforementioned measures.

The second one-way ANOVA was conducted to examine the effect of annual income on participants' scores on the Mini-K, Delaying Gratification Inventory, Sociosexual Orientation Inventory, and Future Discounting measures. This analysis was completed due to the aforementioned relationship between life history strategy and resource allocation. Results indicated that there was a significant effect of income on endorsement of future discounting ($F_{4, 282} = 4.82$, p = .001). Tukey HSD post hoc comparisons indicated that the mean score for the future discounting measure of individuals earning greater than $80,000 per year ($M$ = 5.00, SD = 2.34) was significantly lower than that of individuals earning between $10,000 and $25,000 ($M$ = 6.88, SD = 2.31) and between $25,000 and $50,000 ($M$ = 6.91, SD = 2.52). This suggests that individuals who earn larger incomes (i.e., greater than $80,000 per year) endorse less financial risk-taking than those with lower incomes, specifically those who earn between $10,000 and $50,000 annually.

Correlations

Consistent with previous literature (Hill et al., 2004), perfectionistic strivings perfectionism and self-evaluative perfectionism were positively correlated, $r = .33$ (see Table 1). Additionally, consistent with expectations, the Mini-K was positively correlated with perfectionistic strivings perfectionism ($r = .25$) and negatively correlated with the Sociosexual Orientation Inventory ($r = –.25$). Contrary to hypotheses, self-evaluative perfectionism was not significantly correlated with the Mini-K ($r = –.07$). Future discounting scores were not significantly correlated with any of the life history strategy or perfectionism indicators, suggesting that this measure might not be reflective of one's life history strategy, as intended.

Correlations among Delaying Gratification composite and subscale scores were inconsistent with previous literature (Hoerger et al., 2011), as several subscales were negatively correlated or were not significantly correlated, whereas previous findings indicated that the subscales were significantly positively correlated. The Delaying Gratification Inventory was excluded from further analyses due to the low internal consistency reliabilities and inter-scale correlations inconsistent with previous literature, as these suggest that the data do not provide adequate indication of participants' abilities to delay gratification. Additionally, the lack of correlation among the future discounting measure and other life history indicators suggests that the measure, while indicative of one's financial risk-taking, is not an apt representation of one's life history strategy. Further, the literature does not provide evidence to support these items as indicators of life history strategy.

Nonlinear relationships among study variables were examined, including logarithmic, inverse, quadratic, cubic, compound, power, S, growth, and exponential models. Results indicated that for all pairs of variables, non-linear models did not account for more variance than linear models.

Perfectionism and Life History Indicators

To more completely examine the relationships between perfectionism and life history, separate hierarchical multiple regressions were conducted for self-evaluative and perfectionistic strivings perfectionism. Gender was controlled for in the first step of each regression, due to the significant between-groups gender differences noted above. The Mini-K and Sociosexual Orientation Inventory were examined with gender as predictors in the second step of each regression (see Table 5).

It was hypothesized that life history indicators would be predictive of self-evaluative perfectionism. The multiple regression analysis did not support this hypothesis, $R^2 = .02$, $F = 2.07$, $p = .104$ (see Table 5). It was also hypothesized that life history indicators would be predictive of perfectionistic strivings perfectionism. This hypothesis was supported, $R^2 = .08$, $F = 7.65$, $p < .001$ (see Table 5). The predictors accounted for approximately 8% of the variance in perfectionistic strivings perfectionism. The Mini-K significantly contributed to the regression equation ($\beta = .28$, $p < .001$), but gender and the Sociosexual Orientation Inventory did not significantly contribute to the regression equation.

Discussion

The purpose of the current study was to explore the relationships between life history strategy, an evolutionary model developed to help understand certain decision

making strategies and mating behaviors, and the different dimensions of perfectionism, using a sample that is generally representative of the United States population. Both perfectionistic strivings perfectionism and self-evaluative perfectionism were hypothesized to be associated with slow life history strategy, which is the strategy that consists of long-term, more conscientious decision making. However, findings indicated that only perfectionistic strivings perfectionism was associated with slow life history strategy, while self-evaluative perfectionism did not exhibit an association with life history strategy. Further, perfectionistic strivings perfectionism exhibited this association with a general life history indicator but not with an indicator specific to the sexual and reproductive domains of life history strategy, suggesting that associations with the more specific domains of life history strategy might differ when examined independently.

Life history strategy is characterized and measured by behaviors relevant to parenting, reproduction, sexuality, and resource allocation. In the current study, life history strategy was measured by the Mini-K, a measure of slow life history strategy that examines several domains: family and friend social contact and support, altruism, mother/father relationship quality, insight, planning and control, intentions toward infidelity, and religiosity. Additionally, sociosexuality is a construct that indicates one's willingness to engage in unrestricted sexual encounters (i.e., casual sex, sex void of romantic commitment). Sociosexuality is relevant to life history strategy because it relates to the mating and reproductive domains of life history strategy.

An important difference between fast- spectrum and slow-spectrum individuals is the ability and willingness to prioritize and make decisions in these domains that affect one in the short- and long-term. Slow-spectrum individuals make decisions to benefit the

long-term, and fast-spectrum individuals make decisions that benefit them in the short-term and can be characterized as more reckless and impulsive (Wolf et al., 2007). The findings supported this, as the SOI, a measure of unrestricted sociosexuality, which is considered a fast-spectrum trait, was found to be inversely correlated to the Mini-K, a general indicator of slow life history strategy. Thus, as expected based on life history theory, those that exhibited greater unrestricted sociosexuality endorsed fewer qualities associated with slow-spectrum life history strategy. Additionally, this correlation suggests that while the SOI was not specifically developed to assess the reproductive and mating domains of life history strategy, it appears to be an adequate indicator of those domains in the current study.

Perfectionistic strivings perfectionism, measured by the Perfectionism Inventory, is a construct composed of four traits: striving for excellence (i.e., tendency to pursue perfect results and high standards), organization (i.e., tendency to be neat and orderly), planfulness (i.e., tendency to plan ahead and to deliberate over decisions), and high standards for others (i.e., tendency to hold others to one's own perfectionistic ideals). Consistent with the hypothesis, findings indicated that slow life history strategy, assessed by the Mini-K, appears to be positively correlated with and predictive of one's endorsement of perfectionistic strivings perfectionism in both univariate correlation analyses and regression analyses that controlled for gender. However, sociosexuality was not found to be significantly correlated with, or predictive of, one's endorsement of perfectionistic strivings perfectionism, suggesting that the reproductive and mating domains of life history strategy do not independently exhibit a strong relationship with perfectionistic strivings perfectionism compared to a general indicator of life history

strategy that includes those and other domains (i.e., altruism, insight, planning and control).

While the relationship between perfectionistic strivings perfectionism and life history strategy had not been explored previously, the findings align with a logical conceptual understanding of perfectionistic strivings perfectionism and slow life history strategy. Perfectionistic strivings perfectionism consists of characteristics that are future-oriented and/or relate to the pursuit of high standards and goals. Given that slow life history strategists make decisions regarding mate selection, resource allocation, and reproduction based on long-term, future gain, it follows that a factor of perfectionism that is similarly focused on long-term goal achievement would be significantly associated with a measure of slow life history strategy.

Further, the findings of the current study are consistent with related findings and with the literature on life history theory more generally. For example, the findings of the current study are consistent with the relationship between the Behavioral Approach System (BAS) and life history strategy established by Krupić and colleagues (2018), which indicated that goal-drive persistence was associated with slow-spectrum life history strategy. Relatedly, Mautz and colleagues (2017) found that aspects of BAS, particularly the persistent pursuit of goals, were associated with perfectionistic strivings perfectionism. Thus, the findings of the current study contribute to converging evidence of a relationship between slow life history strategy, perfectionistic strivings perfectionism, and BAS, particularly the goal-drive persistence component of BAS, established in previous studies.

Additionally, while perfectionistic strivings perfectionism was found to be significantly related to the Mini-K, a general indicator of life history strategy, it was not significantly related specifically to the sexual or mating domain of life history strategy, as measured by the SOI. Specific traits (i.e., lack of self-control, willingness to use others for gain, low inhibition) have previously been found to be related to both sociosexuality and fast-spectrum life history strategies more generally (McDonald, et al., 2012; Dunkel, Mathes, Kesselring, Decker, & Kelts, 2015); however, the current findings indicated that perfectionism was associated with slow life history strategy without having a strong association to sociosexuality independently. This lack of relationship was consistent with the assertions of Holtzman and Senne (2014), who suggested that the mating and sexual behaviors can be very nuanced and might not be accounted for simply by a one-dimensional model of fast-slow life history theory. Rather, they asserted that individuals can exhibit components of multiple mating strategies simultaneously and that they are not always inversely related as the one-dimensional life history model of mating behavior suggests. Their multidimensional model captured individuals that exhibit solely short-term mating, solely long-term mating, a combination of short- and long-term mating, and neither short- nor long-term mating. Conceptualization of sociosexuality via this model might help explain the lack of association between the SOI and perfectionistic strivings perfectionism, despite its association with a general indicator of slow life history strategy, as it suggests that sociosexuality may be more complex than the measures used in this investigation might have accounted for.

Overall, perfectionistic strivings perfectionism appears to relate to one's decision making in domains of slow life history strategy, as measured by the Mini-K. Individuals

who report high perfectionistic strivings perfectionism think more deliberately about and consider long-term priorities, rather than engage in impulsive, short-term oriented decision-making. Given that life history theory is characterized by individuals' decisions regarding mate selection, parenting efforts, and resource allocation (Geary, 2002), it is reasonable that those that exhibit slow life history strategy would exhibit characteristics of perfectionistic strivings perfectionism, as these characteristics would be adaptive in planning and executing the greater long-term investment in both parenting and resource allocation for family survival.

Self-evaluative perfectionism is a construct composed of four components: concern over mistakes (i.e., tendency to experience distress or anxiety over making a mistake), need for approval (i.e., tendency to seek validation from others and to be sensitive to criticism), perceived parental pressure (i.e., tendency to feel the need to perform perfectly to obtain parental approval), and rumination (i.e., tendency to obsessively worry about past errors, less than perfect performance, or future mistakes). Participants' life history strategies—measured by the Mini-K in a general fashion, and by the SOI to assess the mating and reproductive domain—were hypothesized to be associated with their endorsements of self-evaluative perfectionism. However, findings indicated that neither measure was correlated with or predictive of one's endorsement of self-evaluative perfectionism.

The relation between self-evaluative perfectionism and life history strategy had not been empirically studied previously. Logically, the characteristics of self-evaluative perfectionism may be less directly related to mating, parenting, and reproductive efforts, and resource allocation, given their focus on past and present performance concerns, and

worry about performance deficits; these characteristics differ from the future goal orientation of perfectionistic strivings perfectionism, which may be more relevant to long-term decision making. This conceptualization of a key difference between self-evaluative and perfectionistic strivings perfectionism is consistent with findings from Powers, Koestner, Zuroff, Milyavskaya, and Gorin (2011) who completed five studies examining perfectionism, self-criticism, and goal pursuit of undergraduates in three domains (weight management, music performance, academic performance). Findings indicated that components of self-evaluative perfectionism (i.e., harsh, self-critical, evaluative concerns) are associated with diminished goal progress, whereas aspects of perfectionistic strivings perfectionism, in the absence of self-evaluative components, are associated with positive goal progress (Powers et al., 2011). Relatedly, in a study of perfectionism and academic performance and motivation in a sample of 207 undergraduate students, aspects of perfectionistic strivings perfectionism (i.e., high personal standards, need for organization) were found to be positively associated with self-efficacy for learning and performance, adaptive metacognitive and cognitive learning strategies, and effective resource management (Mills & Blankenstein, 2000). Conversely, aspects of self-evaluative perfectionism (i.e., sensitivity to criticism) were associated with test anxiety and decreased likelihood of help seeking (Mills & Blankenstein, 2000). While these findings pertain specifically to goal/academic pursuits, they speak to the larger differences in perfectionistic strivings and self-evaluative perfectionism. Specifically, those that exhibit perfectionistic strivings perfectionism are better able to plan for and make appropriate decisions related to future goals and tasks whereas those that exhibit self-evaluative perfectionism appear to experience difficulty doing so, due to

a tendency to prioritize the present concern over mistakes and the perceptions of others. This is consistent with the results of this investigation where slow-spectrum life history strategy was associated with perfectionistic strivings perfectionism but not self-evaluative perfectionism.

Further, these findings are consistent with previous findings regarding associations between self-evaluative perfectionism and disorders and distress (i.e., depression, anxiety, anger, hostility), which contribute to psychological maladjustment and might hinder one's efforts toward goal achievement (DiBartolo, Li, & Frost, 2008; Dunkley, Blankenstein, Masheb, & Grilo, 2006; Enns, Cox, & Clara, 2002; 2005), whereas perfectionistic strivings perfectionism is shown to have mixed associations with these indicators (Macedo et al., 2015; Stoeber & Otto, 2006). Overall, if self-evaluative perfectionism is relevant to life history strategy, this relationship was not detectable with use of either the Mini-K or the SOI. This lack of association might be related to the emphasis on present evaluative concerns, rather than the future-oriented goals and decision making of perfectionistic strivings perfectionism.

Limitations and Future Directions

The self-report nature of the questionnaire data used in this investigation was a limitation of this study, as many of these questionnaires assessed individuals' behavior, which might be better assessed in a behavioral study. Additionally, factors such as social desirability or other response biases might have influenced participants' item endorsements. However, self-report data have been shown to be reliable, and it is not practical to measure some of these variables in a direct fashion (e.g., sexual behavior over

time; emotional connections with family over time), given that these primarily assess for patterns of behavior, rather than behavior in a single instance.

An important improvement to be made going forward will be to build upon the measurement of life history constructs used in the current study. Utilizing the full *Arizona Life History Battery* (Figueredo et al., 2007), as opposed to the brief version, the *Mini-K Life History Short Form* (Mini-K; Figueredo et al., 2006) utilized in the current study, might provide useful additional data relevant to each of the domains of life history strategy, such as more detailed information regarding specific interpersonal relationships, as well as more indicators of one's altruistic behaviors. Another measurement option is the *High K Strategy Scale* (HKSS; Giosan, 2006). The HKSS (Giosan, 2006) is a 23-item scale developed to assess the following characteristics: preserving health of offspring and self, achieving upward mobility, social capital (i.e., receiving help from others when needed), and careful consideration of risks. Like the Mini-K, high scores on the HKSS indicate a slow life history strategy.

Improvements upon measurement of sociosexuality are also warranted. While the Sociosexual Orientation Inventory (SOI) was used to measure unrestricted sociosexuality and yielded significant associations with a general measure of slow life history strategy (Mini-K), this measure was not developed to assess this domain of life history strategy. Therefore, it might be beneficial to utilize measures specifically developed to assess the sexual and mating domains of slow life history strategy, such as the measurement strategy utilized by Jackson and Kirkpatrick (2007). While they utilized the SOI, they also utilized items from the Interest in Uncommitted Sex scale (Bailey Gaulin, Agyei, & Gladue, 1994) and items developed to assess attitudes toward long-term committed

relationships as well as female short-term mating psychology as they relate to evolutionary psychology. This measurement method served to provide a more holistic understanding of one's mating and reproductive behavior, as it assessed both long- and short-term mating strategies. Additionally, these measures were more specifically related to evolutionary theory. Using more nuanced measures of sociosexuality related to life history strategy might provide a better understanding of how these domains relate to perfectionism.

Further, the measures of future discounting and delayed gratification, theoretically relevant to life history strategy (i.e., decisions regarding allocation of energy towards parenting and resource allocation), proved not to be adequate indicators in the present study. The future discounting measure did not correlate with other life history indicators, and the Delaying Gratification Inventory had insufficient inter-item reliability coefficients for the subscales. This posed an unexpected limitation to this study, as one's prioritization of long- and short-term gain are important components to life history strategy but were not measured independently in this investigation, due to the failure of the DGI and future discounting measures to perform as hoped. Therefore, future studies might utilize measures of temporal discounting and delayed gratification that have been developed to assess these constructs as they relate to life history strategy. For example, the Jake's Temptation Scale (Figueredo et al., 2006), is a 41-item questionnaire that assesses participants' recent temptations to engage in a variety of behaviors, which assesses how participants assess the costs and benefits of specific behaviors. Another measurement option is the Impulse Control Scale (Figueredo et al., 2006), which is a 28-item measure that assesses participants' long-term planning abilities and cognitive

control. Both of these instruments assess one's ability and willingness to prioritize long-term gain over short-term in various domains.

Future studies might also improve upon examination of perfectionism. For example, while the current study assessed the two dimensions of perfectionism, assessment using the eight subscales of the Perfectionism Inventory might provide a more nuanced understanding of the specific aspects of perfectionism as they relate to life history strategy. For example, given the utility of planfulness, organization, and striving for excellence in the execution of long-term goals, it is possible that these specific facets of perfectionistic strivings perfectionism account for its association with slow life history strategy, more so than the fourth facet, high standards for others; this is posited given that high standards for others conceptually has a less direct relationship with one's long-term goal pursuits. Relatedly while self-evaluative perfectionism as a composite did not exhibit a relationship with slow life history strategy, it is possible that concern over mistakes, a facet that has some utility in long-term goal achievement, might be independently related to slow life history strategy. Additionally, it may also have been beneficial to utilize measures of perfectionism more directly related to aspects of life history strategy (i.e., sexuality). While perfectionism has scarcely been explored as it relates to sexual behavior, it has been explored in terms of its relation to partner desirability and sexual perception. Stoeber, Harvey, Almeida, and Lyons (2013) utilized scales developed specifically to examine the relation between multidimensional sexual perfectionism (i.e., self-oriented, partner-oriented, partner-prescribed, and socially-prescribed sexual perfectionism; Multidimensional Sexual Perfectionism Questionnaire; Snell, 1997) and individuals' perceptions of their own sexuality (Multidimensional

Sexual Self-Concept Questionnaire; Snell, 2011). Given that reproductive and sexual behaviors are important components of life history strategy, it might be beneficial in the future to use an instrument developed to measure perfectionism in the sexual domain, in addition to the general measure of perfectionism utilized in the current study.

Lastly, given that the life history framework was developed to explain behavioral decision-making, specifically as it pertains to the allocation of energy toward fitness- and reproductive-related behaviors, it might be beneficial to replicate the current study utilizing behavioral tasks intended to measure relevant constructs (i.e., temporal discounting, delayed gratification, relationship and sexual behaviors) in addition to the self-report measures, as this might provide further information regarding participants' behaviors that relate to life history strategy.

Conclusions

Perfectionistic strivings perfectionism was found to be associated with slow life history strategy, while self-evaluative perfectionism did not exhibit an association with life history strategy in a community sample. Additionally, perfectionistic strivings perfectionism exhibited this association with a general life history indicator but not with an indicator specific to the sexual and reproductive domains of life history strategy. This suggests that traits such as planning, organization, striving for excellence, and high standards for others relate to one's decision making regarding parenting, mating and resource allocation (when assessed together), whereas traits associated with self-evaluative perfectionism (i.e., rumination, perceived parental pressure, concern over mistakes, need for approval) do not appear to be significantly associated with decision making in the aforementioned domains that encompass life history strategy. The lack of

significant relationship found between self-evaluative perfectionism and life history strategy supports the previously established multidimensional nature of perfectionism, and might specifically relate to differences in orientation towards future goals and present evaluative concerns. Overall, the findings suggest that these dimensions differ in their relationship to the life history framework.

The findings of the current study indicate that improved assessment of life history strategy and behaviors/constructs related to its specific domains might provide a better understanding of the ways in which the life history framework relates to indicators of perfectionism. However, the current study still provides a valuable contribution to the literature on the dimensions of perfectionism and their predictors. Specifically, results suggest a preliminary association between perfectionistic strivings perfectionism and life history theory that is generalizable to the United States population, given the representative sample utilized. Additionally, the differential findings of the examination of life history strategy and each dimension of perfectionism contribute novel information to the current understanding of the multidimensional nature of perfectionism. The current study is the first to examine the associations between the life history framework and the dimensions of framework, and the findings provide justification for further, more specific, exploration of the associations between these constructs.

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Table 1

Descriptive Statistics and Correlation Coefficients for All Study Variables

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Mini-K	*.84*										
2. SOI	-.25**	*.74*									
3. DGI-C	.20**	.07	*.52*								
4. DGI-P	.28**	.15*	.36**	*.10*							
5. DGI-S	.00	-.02	.62**	-.09	*.50*						
6. DGI-F	.08	.04	.59**	.03	.18*	*.12*					
7. DGI-M	.34**	-.05	.43**	.33**	-.18**	.19**	*.15*				
8. DGI-A	-.09	.09	.70**	-.10	.57**	.26**	.00	*.42*			
9. FD	.10	.01	.07	.00	.11	.04	.00	.02	*.78*		
10. SEP	-.07	-.09	.37**	-.05	.39**	.15	.03	.41**	.06	*.95*	
11. PSP	.25**	.05	.24**	.22**	-.03	.12	.28**	.12	-.06	.33**	*.90*
Mean	3.34	66.38	110.04	24.82	21.10	20.85	23.92	19.34	6.44	11.75	13.74
SD	0.62	56.53	8.52	2.72	3.59	2.91	2.86	3.38	2.64	3.22	2.18

Notes. Values in italics on the main diagonal are Cronbach's coefficient alpha. SOI = Sociosexual Orientation Inventory. DGI = Delaying Gratification Inventory. DGI-C = DGI-Composite. DGI-P = DGI-Physical. DGI-S = DGI-Social. DGI-F = DGI-Food. DGI-M = DGI-Money. DGI-A = DGI-Achievement. FD = Future Discounting. SEP = Self-Evaluative Perfectionism. PSP = Personal Strivings Perfectionism. $N = 287$.
* $p < .05$. ** $p < .01$

Table 2

Results of t-tests Comparing Means of the Current Study and Comparable Studies for the Delaying Gratification Inventory, Mini-K, and Perfectionism Inventory

Measure	*M*	*SD*	*M*	*SD*	95% CI for Mean Difference	t	*p*
	Current Study		Hoerger, Quirk, & Weed (2011)				
DGI-C	110.04	8.52	127.90	20.20	-18.85, 16.87	-35.50	< .001
DGI-P	24.82	2.72	22.80	5.20	1.71, 2.34	12.61	< .001
DGI-S	21.10	3.59	29.30	4.40	-8.61, -7.78	-38.67	< .001
DGI-F	20.85	2.91	22.30	5.80	-1.78, -1.11	-8.42	< .001
DGI-M	23.92	2.86	26.80	6.40	-3.21, -2.54	-17.04	< .001
DGI-A	19.34	3.38	26.70	6.00	-7.75, -6.97	-36.91	< .001
	Current Study		Olderbak, Gladden, Wolf, & Figueredo (2014)				
Mini-K	3.34	.62	1.41	.59	1.86, 2.00	52.92	< .001
	Current Study		Hill et al. (2004)				
SEP	11.75	3.22	11.68	2.61	-.30, .45	.39	.696
PSP	13.74	2.18	12.83	2.41	.66, 1.16	7.10	< .001
	Current Study		Simpson & Gangestad (1991)				
SOI	66.38	56.53	53.71	32.46	6.10, 19.23	3.80	< .001

Notes. DGI = Delaying Gratification Inventory. DGI-C = DGI-Composite. DGI-P = DGI-Physical. DGI-S = DGI-Social. DGI-F = DGI-Food. DGI-M = DGI-Money. DGI-A = DGI-Achievement. SEP = Self-Evaluative Perfectionism (Perfectionism Inventory). PSP = Perfectionistic Strivings Perfectionism (Perfectionism Inventory).

Table 3

Results of t-test and Descriptive Statistics for Life History and Perfectionism Measures by Sex

	Sex						
	Male		Female		95% CI for Mean		
	M	*SD*	*M*	*SD*	Difference	t	*p*
Mini-K	3.29	0.63	3.37	0.61	-0.23, 0.06	-1.11	.269
SOI	80.25	61.19	55.97	50.50	11.29, 37.27	3.68	< .001
DGI-C	111.19	9.70	109.18	7.43	-0.06, 4.07	-1.91	.049
DGI-P	25.08	2.96	24.63	2.51	-0.18, 1.09	1.40	.162
DGI-S	21.01	3.91	21.18	3.34	-1.03, 0.70	-0.39	.694
DGI-F	21.33	3.24	20.50	2.59	0.14, 1.54	2.37	.015
DGI-M	24.09	2.77	23.79	2.93	-0.38, 0.97	0.87	.386
DGI-A	19.67	3.33	19.09	3.40	-0.21, 1.38	1.45	.148
FD	5.85	2.65	6.87	2.56	-1.63, -0.41	-3.23	.001
SEP	11.44	3.28	11.99	3.16	-1.30, 0.21	-1.42	.156
PSP	13.72	2.08	13.76	2.26	-0.55, 0.47	-0.16	.875

Notes. SOI = Sociosexual Orientation Inventory, DGI = Delaying Gratification Inventory, DGI-C = DGI Composite, DGI-P = DGI-Physical, DGI-S = DGI-Social, DGI-F = DGI-Food, DGI-M = DGI-Money, DGI-A = DGI-Achievement, FD = Future Discounting, SEP = Self-Evaluative Perfectionism, PSP = Perfectionistic Strivings Perfectionism. Male n = 123, Female n =164, df = 285.

Table 4

Analysis of Variance for Life History and Perfectionism Measures by Marital Status and Income

Variable	Measure	F	*p*
Marital Status	Mini-K	3.59	.014
	SOI	0.74	.532
	DGI-C	0.93	.429
	DGI-P	1.24	.296
	DGI-S	0.16	.924
	DGI-F	2.75	.043
	DGI-M	0.68	.563
	DGI-A	0.25	.860
	FD	1.13	.338
	SEP	0.17	.920
	PSP	1.48	.220
Income	Mini-K	3.17	.014
	SOI	0.75	.562
	DGI-C	1.61	.173
	DGI-P	1.41	.232
	DGI-S	1.61	.171
	DGI-F	1.67	.158
	DGI-M	2.49	.043
	DGI-A	1.37	.245
	FD	4.82	.001
	SEP	1.87	.115
	PSP	1.30	.271

Notes. SOI = Sociosexual Orientation Inventory, DGI = Delayed Gratification Inventory, DGI-C = DGI Composite, DGI-P = DGI-Physical, DGI-S = DGI-Social, DGI-F = DGI-Food, DGI-M = DGI-Money, DGI-A = DGI Achievement, FD = Future Discounting, SEP = Self-Evaluative Perfectionism, PSP = Personal Standards Perfectionism. Marital Status: Between Groups df = 3, Within Groups df = 283. Income: Between Groups df = 4, Within Groups df = 282.

Table 5

Standard Multiple Regression of Perfectionism Composites on Life History Variables

	Self-Evaluative Perfectionism				Perfectionistic Strivings Perfectionism			
Step 1								
Variable	*B*	*SE B*	*β*	*p*	*B*	*SE B*	*β*	*p*
Constant	10.90	.63			13.68	.43		
Gender	.55	.38	.08	.156	.04	.26	.01	.875
R^2			.01				.00	
Adjusted R^2			.00				.00	
F statistic			2.02	.156			.03	
Step 2								
Constant	13.12	1.32			10.06	.87		
Gender	.45	.39	.07	.253	.07	.26	.02	.782
Mini-K	-.51	.32	-.10	.110	.98	.21	.28	< .001
SOI	-.01	.00	-.10	.108	.01	.00	.12	.051
R^2 Change			.01				.08	
F change			2.09	.125			11.46	< .001
R^2			.02				.08	
Adjusted R^2			.01				.07	
F statistic			2.07	.104			7.65	< .001

Notes. SOI = Sociosexual Orientation Inventory. $N = 287$.

Appendix A

Appalachian State University Institutional Review Board Notice of Approval

To: Robert Hill , Psychology
From: Dr. Lisa Curtin, Institutional Review Board Chairperson
Date: 5/25/2015
RE: Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)
Study #: 15-0237

Study Title: Perfectionism and Dark Triad
Submission Type: Initial
Expedited Category: (7) Research on Group Characteristics or Behavior, or Surveys, Interviews, etc.
Approval Date: 5/25/2015
Expiration Date of Approval: 5/23/2016

The Institutional Review Board (IRB) approved this study for the period indicated above. The IRB found that the research procedures meet the expedited category cited above. IRB approval is limited to the activities described in the IRB approved materials, and extends to the performance of the described activities in the sites identified in the IRB application. In accordance with this approval, IRB findings and approval conditions for the conduct of this research are listed below.

Regulatory and other findings:

The IRB determined that this study involves minimal risk to participants.
The IRB waived the requirement to obtain a signed consent form for some or all subjects because the only record linking the subject and research would be the consent document and the principal risk would be potential harm resulting from a breach of confidentiality. Each subject will be asked whether the subject wants documentation linking the subject with the research, and the subject's wishes will govern.

Approval Conditions:

Appalachian State University Policies: All individuals engaged in research with human participants are responsible for compliance with the University policies and procedures, and IRB determinations.

Principal Investigator Responsibilities: The PI should review the IRB's list of PI responsibilities. The Principal Investigator (PI), or Faculty Advisor if the PI is a student, is ultimately responsible for ensuring the protection of research participants; conducting

sound ethical research that complies with federal regulations, University policy and procedures; and maintaining study records.

Modifications and Addendums: IRB approval must be sought and obtained for any proposed modification or addendum (e.g., a change in procedure, personnel, study location, study instruments) to the IRB approved protocol, and informed consent form before changes may be implemented, unless changes are necessary to eliminate apparent immediate hazards to participants. Changes to eliminate apparent immediate hazards must be reported promptly to the IRB.

Approval Expiration and Continuing Review: The PI is responsible for requesting continuing review in a timely manner and receiving continuing approval for the duration of the research with human participants. Lapses in approval should be avoided to protect the welfare of enrolled participants. If approval expires, all research activities with human participants must cease.

Prompt Reporting of Events: Unanticipated Problems involving risks to participants or others; serious or continuing noncompliance with IRB requirements and determinations; and suspension or termination of IRB approval by an external entity, must be promptly reported to the IRB.

Closing a study: When research procedures with human subjects are completed, please complete the Request for Closure of IRB review form and send it to irb@appstate.edu.

Websites:

1. PI responsibilities: http://researchprotections.appstate.edu/sites/researchprotections.appstate.edu/files/PI%20Responsibilities.pdf
2. IRB forms: http://researchprotections.appstate.edu/human-subjects/irb-forms

Appendix B

Consent Form Administered to Participants

Consent to Participate in Research on Personality and Behavior

Information to Consider About this Research

Opinions and activities

Principal Investigator: Dr. Robert W. Hill
Department: Psychology
Contact Information:
Dr. Robert W. Hill, Psychology Department, Appalachian State University, Boone NC. 28608.

What is the purpose of this research?
This research is intended to inform the field of research regarding individual personality traits and behaviors.

What will I be asked to do?
You will be asked to answer a series of multiple choice questions pertaining to your personality and behavior requiring about 30 minutes. Some of the questions will include sensitive personal information, such as your sexual history.

What are possible harms or discomforts that I might experience during the research?
To the best of our knowledge, the risk of harm for participating in this research study is no more than you would experience in everyday life.

What are the possible benefits of this research?
You likely will experience no personal benefit from your participation, but the information gained through this research will help researchers better understand how personality impacts behavior.

Will I be paid for taking part in the research?
Yes. For your participation, you will be paid $.50

How will you keep my private information confidential?
No identifying information will be asked of any participant, nor will any data be released beyond the control of the principle investigators and research committee. *Please be aware that any work performed on Amazon MTurk can potentially be linked to information about you on your Amazon public profile page, depending on the settings you*

have for your Amazon profile. We will not be accessing any personally identifiable information about you that you may have put on your Amazon public profile page. We will store your MTurk worker ID separately from the other information you provide to us.

Who can I contact if I have questions?
You may contact the Principal Investigators through email at hillrw@appstate.edu if you have concerns. If you have questions about your rights as someone taking part in research, contact the Appalachian Institutional Review Board Administrator at 828-262-2692 (days), through email at irb@appstate.edu or at Appalachian State University, Office of Research and Sponsored Programs, IRB Administrator, Boone, NC 28608.

Do I have to participate? What else should I know?
Your participation in this research is completely voluntary. If you choose not to volunteer, there will be no penalty and you will not lose any benefits or rights you would normally have. If you decide to take part in the study you still have the right to decide at any time that you no longer want to continue. There will be no penalty and no loss of benefits or rights if you decide at any time to stop participating in the study. However, if you do not complete the survey task, you will not receive compensation.

This research project has been approved, as required, by the Institutional Review Board of Appalachian State University this study was approved on.

I have decided I want to take part in this research. What should I do now?

- I have read all of the above information.
- I understand that I can stop taking part in this study at any time.
- I understand I am not giving up any of my rights.
- **By continuing with the on line questionnaires I consent to participate**.

Appendix C

Demographic Data Items

Age:
___ Please enter your age in years.

Please indicate your race:
___ African American
___ Caucasian
___ Asian
___ Hispanic/Latino
___ Other

Please indicate your gender:
___ Male
___ Female

Please indicate your marital status:
___ Single, never married
___ Married / Partnered
___ Divorced / Separated
___ Widowed

Please indicate the duration of your last 3 significant romantic relationships in months:
___ Current relationship
___ Previous relationship
___ Prior relationship

Please indicate your Annual Income:
___ < $10,000
___ $10,000 – 25,000
___ $25,000 – 50,000
___ $50,000 – 80,000
___ > $80,000

Appendix D

The Mini-K Life History Strategy Short Form (Mini-K)

Please indicate how strongly you agree with the following statements. Use the scale below and write your answers in the spaces provided.

Not at all	Slightly	Moderately	Much	Very Much
1	2	3	4	5

1. I can often tell how things will turn out.
2. I try to understand how I got into a situation to figure out how to handle it.
3. I often find the bright side to a bad situation.
4. I don't give up until I solve my problems.
5. I often make plans in advance.
6. I avoid taking risks.
7. While growing up, I had a close and warm relationship with my biological mother.
8. While growing up, I had a close and warm relationship with my biological father.
9. I have a close and warm relationship with my own children.
10. I have a close and warm romantic relationship with my sexual partner.
11. I would rather have one than several sexual relationships at a time.
12. I have to be closely attached to someone before I am comfortable having sex with them.
13. I am often in social contact with my blood relatives.
14. I often get emotional support and practical help from my blood relatives.
15. I often give emotional support and practical help to my blood relatives.
16. I am often in social contact with my friends.
17. I often get emotional support and practical help from my friends.
18. I often give emotional support and practical help to my friends.
19. I am closely connected to and involved in my community.
20. I am closely connected to and involved in my religion.

Appendix E

Future Discounting Items

Please indicate your preference by checking either A or B.

1. Do you want (a) 50% chance of getting $600 OR (b) get $100 for sure?
   A B
2. Do you want (a) 50% chance of getting $500 OR (b) get $100 for sure?
   A B
3. Do you want (a) 50% chance of getting $400 OR (b) get $100 for sure?
   A B
4. Do you want (a) 50% chance of getting $300 OR (b) get $100 for sure?
   A B
5. Do you want (a) 50% chance of getting $200 OR (b) get $100 for sure?
   A B
6. Do you want (a) $100 tomorrow OR (b) $150 in 90 days?
   A B
7. Do you want (a) $100 tomorrow OR (b) $140 in 90 days?
   A B
8. Do you want (a) $100 tomorrow OR (b) $130 in 90 days?
   A B
9. Do you want (a) $100 tomorrow OR (b) $120 in 90 days?
   A B
10. Do you want (a) $100 tomorrow OR (b) $110 in 90 days?
    A B

Appendix F

Delaying Gratification Inventory (DGI) Items by Domain

Response format:

1	2	3	4	5
Strongly Disagree	Disagree Somewhat	Neither Agree nor Disagree	Agree Somewhat	Strongly Agree

Food

1. I can resist junk food when I want to.
6. I would have a hard time sticking with a special, healthy diet.
11. If my favorite food were in front of me, I would have a difficult time waiting to eat it.
16. It is easy for me to resist candy and bowls of snack foods.
21. Sometimes I eat until I make myself sick.
26. I have always tried to eat healthy because it pays off in the long run.
31. Even if I am hungry, I can wait until it is meal time before eating something.

Physical

2. I am able to control my physical desires.
7. I like to get to know someone before having a physical relationship.
12. My habit of focusing on what "feels good" has cost me in the long run.
17. I have given up physical pleasure or comfort to reach my goals.
22. I prefer to explore the physical side of romantic involvements right away.
27. When faced with a physically demanding chore, I always tried to put off doing it.
32. I have lied or made excuses in order to go do something more pleasurable.

Social

3. I hate having to take turns with other people.
8. Usually I try to consider how my actions affect others.
13. I think that helping each other benefits society.
18. I try to consider how my actions will affect other people in the long-term.
23. I do not consider how my behavior affects other people.
28. I value the needs of other people around me.
33. There is no point in considering how my decisions affect other people.

Money

4. When I am able to, I try to save away a little money in case an emergency should arise.
9. It is hard for me to resist buying things I cannot afford.
14. I try to spend my money wisely.
19. I cannot be trusted with money.
24. When someone gives me money, I prefer to spend it right away.
29. I manage my money well.

34. I enjoy spending money the moment I get it.

Achievement

5. I worked hard in school to improve myself as a person.
10. I have tried to work hard in school so that I could have a better future.
15. In school, I tried to take the easy way out.
20. I am capable of working hard to get ahead in life.
25. I cannot motivate myself to accomplish long-term goals.
30. I have always felt like my hard work would pay off in the end.
35. I would rather take the easy road in life than get ahead.

Appendix G

Sociosexual Orientation Inventory (SOI)

Please answer all of the following questions honestly. For the questions dealing with behavior, *write* your answers in the blank spaces provided. For the questions dealing with thoughts and attitudes, *circle* the appropriate number on the scales provided.

1. With how many different partners have you had sex (sexual intercourse) within the past year?_____
2. How many different partners do you foresee yourself having sex with during the next five years (Please give a *specific, realistic* estimate)?_____
3. With how many partners have you had sex on *one and only one* occasion?_____
4. How often do you fantasize about having sex with someone other than your current (or most recent) dating partner (Circle one)?
    1) Never
    2) Once every two or three months
    3) Once a month
    4) Once every two weeks
    5) Once a week
    6) A few times a week
    7) Nearly every day
    8) At least once a day
5. Sex without love is OK.

    1 2 3 4 5 6 7 8 9

    I strongly disagree I strongly agree

6. I can imagine myself being comfortable and enjoying "casual" sex with different partners.

    1 2 3 4 5 6 7 8 9

    I strongly disagree I strongly agree

7. I would have to be closely attached to someone (both emotionally and psychologically) before I could feel comfortable and fully enjoy having sex with him or her.

    1 2 3 4 5 6 7 8 9

    I strongly disagree I strongly agree

Appendix H

Perfectionism Inventory (PI)

Please use the following options to rate how much you generally agree with each statement.

1 Strongly Disagree
2 Disagree Somewhat
3 Neither Agree nor Disagree
4 Agree Somewhat
5 Strongly Agree

1. My work needs to be perfect, in order for me to be satisfied.
2. I am over-sensitive to the comments of others.
3. I usually let people know when their work isn't up to my standards.
4. I am well-organized.
5. I think through my options carefully before making a decision.
6. If I make mistakes, people might think less of me.
7. I've always felt pressure from my parent(s) to be the best.
8. If I do something less than perfectly, I have a hard time getting over it.
9. All my energy is put into achieving a flawless result.
10. I compare my work to others and often feel inadequate.
11. I get upset when other people don't maintain the same standards I do.
12. I think things should be put away in their place.
13. I find myself planning many of my decisions.
14. I am particularly embarrassed by failure.
15. My parents hold me to high standards.
16. I spend a lot of time worrying about things I've done, or things I need to do.
17. I can't stand to do something halfway.
18. I am sensitive to how others respond to my work.
19. I'm not very patient with people's excuses for poor work.
20. I would characterize myself as an orderly person.
21. Most of my decisions are made after I have had time to think about them.
22. I over-react to making mistakes.
23. My parent(s) are difficult to please.
24. If I make a mistake, my whole day is ruined.
25. I have to be the best in every assignment I do.
26. I'm concerned with whether or not other people approve of my actions.
27. I'm often critical of others.
28. I like to always be organized and disciplined.
29. I usually need to think things through before I know what I want.
30. If someone points out a mistake I've made, I feel like I've lost that person's respect in some way.
31. My parent(s) have high expectations for achievement.
32. If I say or do something dumb I tend to think about it for the rest of the day.

33. I drive myself rigorously to achieve high standards.
34. I often don't say anything, because I'm scared I might say the wrong thing.
35. I am frequently aggravated by the lazy or sloppy work of others.
36. I clean my home often.
37. I need time to think up a plan before I take action.
38. If I mess up on one thing, people might start questioning everything I do.
39. Growing up, I felt a lot of pressure to do everything right.
40. When I make an error, I generally can't stop thinking about it.
41. I must achieve excellence in everything I do.
42. I am self-conscious about what others think of me.
43. I have little tolerance for other people's careless mistakes.
44. I make sure to put things away as soon as I'm done using them.
45. I tend to deliberate before making up my mind.
46. To me, a mistake equals failure.
47. My parent(s) put a lot of pressure on me to succeed.
48. I often obsess over some of the things I have done.
49. I am often concerned that people will take what I say the wrong way.
50. I often get frustrated over other people's mistakes.
51. My closet is neat and organized.
52. I usually don't make decisions on the spot.
53. Making mistakes is a sign of stupidity.
54. I always felt that my parent(s) wanted me to be perfect.
55. After I turn a project in, I can't stop thinking of how it could have been better.
56. My workspace is generally organized.
57. If I make a serious mistake, I feel like I'm less of a person.
58. My parent(s) have expected nothing but my best.
59. I spend a great deal of time worrying about other people's opinion of me.

Appendix I

Infrequency Scale for Personality Measures

Response Options: True (T) or False (F)

1. On some mornings, I didn't get out of bed immediately when I first woke up.
2. There have been a number of occasions when people I know have said hello to me.
3. There have been times when I have dialed a telephone number only to find that the line was busy.
4. At times when I was ill or tired, I have felt like going to bed early.
5. On some occasions I have noticed that some other people are better dressed than myself.
6. Driving from New York to San Francisco is generally faster than flying between these cities.
7. I believe that most light bulbs are powered by electricity.
8. I go at least once every two years to visit either northern Scotland or some part of Scandinavia.
9. I cannot remember a time when I talked with someone who wore glasses.
10. Sometimes when walking down the sidewalk, I have seen children playing.
11. I have never combed my hair before going out in the morning.
12. I find that I often walk with a limp, which is the result of a skydiving accident.
13. I cannot remember a single occasion when I have ridden on a bus.

*Protocols with more than two of the infrequency items endorsed are considered invalid.

Vita

Hadley Brochu was born in South Bend, Indiana, to Susan and David Brochu. She began her undergraduate studies at Fordham University in the fall of 2011 and majored in psychology. She was awarded the Bachelor of Science degree in the spring of 2015. In the fall of 2016, she began her graduate studies in Clinical Psychology at Appalachian State University (ASU), working towards a Master of Arts degree. During her graduate studies, she engaged in multiple research opportunities. Additionally, she completed her practica at the ASU Counseling Center and the ASU Psychology Clinic, and she completed her internship at the ASU Counseling Center. Ms. Brochu is a member of the American Psychological Association. She intends to pursue a career in clinical work, particularly with individuals with eating disorders and body image concerns.