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Life history strategy and the HEXACO model of personality: A facet level examination

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ABSTRACT

The HEXACO model and life history theory have been used to examine the adaptive trade-offs of personality traits that combine to guide life history strategies (LHSs). A "fast" LHS embodies a preference for early mating along with limited parental investment, whereas a "slow" strategy denotes the opposite pattern. Clarity is currently needed regarding how the HEXACO dimensions, as well as their lower-order facets, differentially relate to varying LHSs at the multivariate level and how sex may influence these relations. A sample of 366 undergraduate students completed self-report measures of LHS and the HEXACO personality traits. Honesty-Humility, Extraversion, Emotionality, and Conscientiousness were positive multivariate predictors of a slower strategy when assessed with a socially-oriented measure of LHS (the Mini-K). Sex moderated the relations between Extraversion and Consciousness in predicting LHS. Significant variability existed among many of the facets for the HEXACO dimensions and LHS. These findings point to the differential relations between the HEXACO dimensions and their respective facets with LHS, which may be obscured when solely examining personality at the dimensional level.

1. Introduction

Life history theory has been used to explain the adaptive trade-offs of various dimensions of personality. These traits coalesce with other characteristics to form life history strategies (LHSs) that guide the use of resources to increase fitness (Figueredo et al., 2006). The HEXACO model (Ashton & Lee, 2007) has been proposed with clearly articulated evolutionary origins that may help to explain the links between personality and LHS (Manson, 2015). Few researchers have examined the differential relations between all of the HEXACO dimensions and LHS, particularly using multivariate approaches. Biological sex is also rarely considered a moderator of these relations. Moreover, each HEXACO dimension contains four lower-order facets (i.e., subscales) and the links between the facets of Honesty-Humility, Agreeableness, and Conscientiousness with LHS have yet to be examined in detail. In the current study, the multivariate associations between LHS and the HEXACO dimensions (in addition to their facets) were analyzed with sex as a potential moderator of these relations.

1.1. Human LHSs

Inter-species variation in LHS reflects how organisms allocate limited resources (e.g., time and energy) to help overcome problems related to survival and reproduction within particular ecologies (Del Giudice, Gangestad, & Kaplan, 2015; Figueredo et al., 2006; Salguero-Gómez et al., 2016). Broadly speaking, organisms can devote resources toward components of somatic effort (e.g., bodily maintenance and repair) or different aspects of reproductive effort (e.g., mating, parenting, and helping kin). LHSs are often studied across and within different species using the metaphor of "speed" which varies along a continuum from "fast" to "slow." Organisms with a faster LHS tend to invest in early reproduction to produce more offspring, but devote less to parental care (Figueredo et al., 2006). In contrast, animals with a slower LHS tend to live longer, produce fewer offspring at a later point in development, and invest more in parental care. Humans have traditionally been classified as a slower species, but there is intraspecific variability with regards to individual LHSs. Indeed, a significant body of research supports the links between slower human LHSs and a tendency to form long-term relationships with allies and mates, altruism, risk-

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aversion, and greater psychological/physiological health (see Del Giudice et al., 2015 and Figueredo et al., 2006 for review). In contrast, faster LHSs have been related to short-term mating tendencies, risk-taking, impulsivity, and antisociality. Intra-individual variation along a fast-to-slow continuum emerges as an adaptive response (made possible by phenotypic plasticity) to local ecological conditions to enhance fitness (Gladden, Figueredo, & Jacobs, 2009; Nettle, 2010). For instance, an unstable and insecure environment can bias individuals toward faster LHSs to encourage early reproduction, higher mating effort, and reduced parental investment. This could be adaptive given the potential benefits of short-term strategies associated with these social-ecological contexts (Nettle, 2010). Cultural parameters also shape human LHSs, such as the availability of contraception and variance in women's reproductive autonomy (Figueredo et al., 2006).

Among humans, evidence supports that sex differences in many life history traits (e.g., adult size, maturational patterns, mortality) have evolved as a consequence of the different selection pressures that ancestral females and males have faced over time (Figueredo et al., 2006; Geary, 2002; Kruger, 2008). These differences can be seen in the divergent aggressive, competitive, and mating tactics used by the sexes, which reliably manifest as a slower strategy for women, embodying a long-term mating orientation, lower mortality rates, and heightened parental effort, in comparison to men. A slower LHS may be more adaptive for women relative to men given women's higher degree of obligatory parental investment (gestation, childbirth, and breast-feeding), their lower lifetime reproductive potential, and the greater importance of maternal survival for the health and longevity of offspring.

1.2. LHS and the HEXACO model

Once regarded as irrelevant "noise," evolutionary psychologists now conceive of individual differences in personality as important given their high degree of variability, heritability, and developmental stability, in addition to their influence on survival and reproductive success (Nettle, 2006; Schaller & Murray, 2008). Variability in personality dimensions may be maintained over evolutionary time as a result of balancing selection, whereby multiple alleles are preserved in a population (i.e., polymorphisms). This genetic variability can facilitate long-term adaptation to particular ecologies and many human genes appear to have "signatures" of long-term balancing selection (e.g., genes for immunity and membrane channels; Andrés et al., 2009). Local social-ecological factors (e.g., resource availability), that are also salient life history parameters, help to determine the relative costs and benefits to fitness associated with the expression of personality traits. It is also possible that personality traits are calibrated to varying levels of other phenotypic characteristics (e.g., physical attractiveness) that help to determine their reproductive payoffs (Lukaszewski & Roney, 2011).

A slower strategy among humans might be expected to be associated with personality dimensions that facilitate sociability, altruism, adherence to social norms, long-term mating, and improved psychological and physical health (Manson, 2015). From the perspective of the Five Factor Model, this has led some researchers to propose that a slower strategy should be linked to higher Conscientiousness, Extraversion, Agreeableness, Emotional Stability (inverse of Neuroticism), and Openness, and some data support this argument (e.g., Gladden et al., 2009). However, far fewer researchers have examined more inclusive, cross-culturally relevant, and evolutionarily informed personality frameworks in relation to LHS, like the HEXACO model. Furthermore, other authors have suggested that not all major dimensions of personality appear to have a strong theoretical and/or empirical link to aspects of a slower strategy (Manson, 2015, 2017; Strouts, Brase, & Dillon, 2017).

In previous research, in regard to mating orientation (a core component of LHS) Honesty-Humility, Emotionality, Agreeableness, and Conscientiousness have correlated positively with restricted sociosexuality in line with a slower LHS, denoting long-term mating tendencies underpinned by a desire for love and intimacy prior to sex (Bourdage, Lee, Ashton, & Perry, 2007; Manson, 2015). In another study, similar results were found (Strouts et al., 2017); however, Agreeableness did not correlate with either a short-term or long-term mating orientation. Conscientiousness has also correlated strongly and positively with future time perspective (i.e., extent to which prospective goals guide current behavior), whereas Emotionality and Openness were uncorrelated with this aspect of a slower strategy (Manson, 2015). Therefore, there appears to be important variability among the HEXACO dimensions in relation to particular components of LHS. Fewer researchers have, however, used comprehensive measures of LHS to study the HEXACO dimensions.

In one study, Extraversion was found to be the strongest positive multivariate predictor of a slower strategy, followed by Emotionality, Conscientiousness, Honesty-Humility, and Agreeableness (Strouts et al., 2017). Openness did not predict LHS. The relation between Extraversion and a slower strategy may seem counterintuitive given its links to short-term mating, risk taking, and sensation seeking (Nettle, 2005). Nonetheless, Extraversion has been associated with a latent factor reflecting a slower LHS called the "K-factor" (Figueredo, Vasquez, Brumbach, & Schneider, 2004), and it may also be part of a dual mating strategy including both short- and long-term mating tendencies (Holtzman & Strube, 2013). Indeed, there seem to be some fast (e.g., interpersonal dominance, risk taking) and slow components to Extraversion (e.g., social skills, positive affect) that may influence fitness and LHS differently depending on social-ecological factors. This is consistent with the idea that different levels of Extraversion embody trade-offs between certain reproductive benefits (e.g., social status) and costs (e.g., increased risk of physical injury; Ashton & Lee, 2007; Nettle, 2005). For traits with complex genetic architecture like Extraversion, the same genetic network may lead to different phenotypes (i.e., pleiotropy) that vary with life history factors, such as the prevalence of disease (Schaller & Murray, 2008). Extraversion should also then be skewed toward the slower end of the life history continuum insofar as LHS is measured with socially-oriented instruments, such as the Mini-K (Figueredo et al., 2006). This may be in contrast, for instance, to measuring LHS using biometric indices (e.g., pubertal timing, age of first sexual intercourse, and number of siblings) that do not evidently emphasize sociability like the Mini-K.

Sex also tends not to be examined as a moderator of the relations between LHS and the HEXACO traits. Like LHS, some HEXACO dimensions differ reliably between the sexes, in particular Emotionality, with women scoring a full standard deviation above men (Ashton & Lee, 2007). This difference can be understood in terms of kin-altruism, with women investing more in family at a cost to themselves than men (Ashton & Lee, 2007). Therefore, high Emotionality is key to providing emotional support and empathizing with others, which are considered important factors related to successful kin-investment (Ashton & Lee, 2007; Manson, 2015). Furthermore, Extraversion may be more important for men in facilitating the formation of coalitional alliances and sexual/romantic relationships, as well as in negotiating status hierarchies (Lukaszewski & von Rueden, 2015; Nettle, 2005). Extraversion could also be more salient for men insofar as this trait is calibrated to variations in physical strength (Lukaszewski & Roney, 2011).

1.2.1. LHS and the HEXACO facets

The facets of the HEXACO dimensions are also rarely studied in relation to LHS. Several of the facets belonging to Emotionality, Extraversion, and Openness have been shown to vary with LHS (Manson, 2015, 2017), and it is possible that selection has operated differentially on particular facets nested within larger-order personality dimensions. In previous work, heightened expression of the Emotionality facets of Dependence (desire for emotional support/comfort) and Sentimentality (feeling strong emotional bonds with others) were found to relate to a slower LHS, whereas higher Anxiety (proclivity to worry)

Table 1
Descriptive statistics.

	Total	Women	Men			
	M (SD)	*M (SD)*	*M (SD)*	*t*	*d*	α
Mini-K	5.12 (0.75)	5.22 (0.73)	5.02 (0.73)	−2.70**	0.27	0.78
Honesty-humility	3.21 (0.57)	3.30 (0.57)	3.10 (0.57)	−3.18**	0.35	0.81
Sincerity	3.23 (0.74)	3.27 (0.74)	3.18 (0.74)	−1.19	0.12	0.62
Fairness	3.16 (0.97)	3.26 (0.95)	3.02 (0.96)	−2.36*	0.25	0.77
Greed avoidance	2.80 (0.86)	2.85 (0.84)	2.75 (0.88)	−1.10	0.12	0.77
Modesty	3.67 (0.70)	3.84 (0.61)	3.48 (0.74)	−4.99**	0.53	0.66
Emotionality	3.35 (0.59)	3.60 (0.49)	3.05 (0.55)	−9.97**	1.06	0.83
Fearfulness	3.07 (0.83)	3.38 (0.79)	2.71 (0.73)	−8.25**	0.88	0.70
Anxiety	3.79 (0.81)	4.05 (0.66)	3.47 (0.84)	−7.28**	0.77	0.71
Dependence	3.02 (0.84)	3.17 (0.83)	2.82 (0.82)	−4.02**	0.42	0.74
Sentimentality	3.52 (0.81)	3.80 (0.69)	3.20 (0.79)	−7.64**	0.81	0.70
Extraversion	3.16 (0.57)	3.11 (0.57)	3.23 (0.53)	−1.92	0.22	0.81
Social self-esteem	3.36 (0.71)	3.27 (0.69)	3.48 (0.70)	2.87**	0.30	0.63
Social boldness	2.78 (0.87)	2.62 (0.89)	2.95 (0.82)	3.60**	0.39	0.76
Sociability	3.25 (0.81)	3.27 (0.83)	3.24 (0.78)	−0.33	0.04	0.71
Liveliness	3.23 (0.73)	3.27 (0.74)	3.23 (0.71)	−0.49	0.06	0.55
Agreeableness	2.95 (0.54)	2.94 (0.57)	2.99 (0.48)	1.00	0.09	0.82
Forgiveness	2.54 (0.79)	2.51 (0.84)	2.59 (0.72)	0.91	0.10	0.74
Gentleness	3.27 (0.69)	3.35 (0.67)	3.20 (0.69)	−2.04*	0.22	0.63
Flexibility	2.78 (0.71)	2.74 (0.74)	2.84 (0.67)	1.35	0.14	0.64
Patience	3.22 (0.84)	3.14 (0.84)	3.34 (0.81)	2.21*	0.24	0.74
Conscientiousness	3.49 (0.57)	3.58 (0.55)	3.37 (0.53)	−3.55**	0.39	0.84
Organization	3.35 (0.89)	3.54 (0.82)	3.13 (0.91)	−4.40**	0.47	0.73
Diligence	3.71 (0.69)	3.79 (0.65)	3.62 (0.71)	−2.31**	0.25	0.68
Perfectionism	3.63 (0.72)	3.71 (0.73)	3.54 (0.69)	−2.16*	0.24	0.66
Prudence	3.25 (0.71)	3.29 (0.71)	3.19 (0.71)	−1.33	0.14	0.65
Openness	3.29 (0.55)	3.22 (0.57)	3.37 (0.53)	−2.63**	0.27	0.78
Aesthetic appreciation	3.38 (0.84)	3.44 (0.82)	3.30 (0.85)	−1.57	0.17	0.62
Inquisitiveness	3.02 (0.81)	2.82 (0.81)	3.23 (0.77)	4.83**	0.52	0.59
Creativity	3.37 (0.80)	3.30 (0.84)	3.43 (0.75)	1.60	0.16	0.66
Unconventionality	3.41 (0.59)	3.34 (0.55)	3.49 (0.62)	2.49*	0.26	0.54

Note. Participant sex coded as 1 = Women and −1 = Men. Independent samples *t*-test significant at $^{*}p < .05$ and $^{**}p < .01$, two-tailed. Cohen's *d* values for effect size provided for sex differences.

was linked to a faster LHS (Manson, 2015). Fearfulness (avoidance of physical harm) was uncorrelated with LHS. In a later study, higher levels of each Extraversion facet—Social Self-Esteem (animated speaking style), Liveliness (being energetic and enthusiastic), Sociability (enjoyment in interacting with others), and Social Boldness (assertiveness in social settings)—were found to be associated with a slower LHS (Manson, 2017) when measured with the Arizona Life History Battery (Figueredo et al., 2004). When analyzing the residualized variance of each facet, however, only greater Sociability related to a slower strategy.

For the facets of Openness, only Creativity (to be innovative in problem-solving) correlated positively with a slower strategy, whereas Aesthetic Appreciation (taking pleasure in beauty and art), Inquisitiveness (curiosity about the social-ecological world), and Unconventionality (to be nonconforming) were uncorrelated with LHS (Manson, 2017). In previous work, the Emotionality, Extraversion, and Openness facets have been studied because they appear to be mixed with respect to life history speed (Manson, 2015, 2017). For the same reason, it may be fruitful to consider the facets of Honesty-Humility, Agreeableness, and Openness that, to our' knowledge, have not been assessed in relation to comprehensive measures of LHS.

The Sincerity facet of Honesty-Humility embodies a tendency to be genuine and an unwillingness to manipulate others in interpersonal interactions, whereas Fairness describes a reluctance to cheat, steal, and take advantage of others (Ashton & Lee, 2007). Greed Avoidance represents disinterest in acquiring material goods signaling higher status and Modesty is characterized by humbleness. Sincerity, Fairness, and Modesty may all predict a slower LHS because these facets denote egalitarian proclivities and the equitable treatment of others. But, a slower LHS can be associated with a drive for social status and resources required to achieve that end, suggesting that Greed Avoidance might not predict a slower LHS (Figueredo et al., 2006). The Agreeableness facets—Forgiveness (trusting and forgiving others), Gentleness (being non-judgmental), Flexibility (tendency to avoid conflict), and Patience (heightened emotional regulation)—all appear to be related to a slower strategy in that they promote positive interpersonal relationships through tolerance and reciprocal altruism. Likewise, the Organization (being orderly), Diligence (being hard-working), Perfectionism (meticulously checking for mistakes), and Prudence (having good judgment) facets of Conscientiousness all ostensibly signal a slower strategy because they are underpinned by an orientation toward future planning, self-regulation, and less impulsivity (Ashton & Lee, 2007).

It is unclear how the facets of each HEXACO dimension may be moderated by sex in predicting LHS because few researchers have examined these associations. Significant sex differences for each facet of Emotionality favoring women have been found (Lee & Ashton, 2004; Manson, 2015). Similarly, women tend to score higher on the Honesty-Humility facets of Fairness and Modesty than men (Lee & Ashton, 2004). This, however, does not mean that these facets will be moderated by sex in predicting LHS, but they may be good candidates.

1.3. Current research

The purpose of the present study was to examine the differential relations between LHS with the HEXACO dimensions and their facets at the multivariate level, as well as to consider the potential moderating role of sex. Based on previous findings (e.g., Manson, 2015), we predicted:

Each HEXACO dimension would positively predict a slower strategy and sex would significantly moderate Emotionality and Extraversion, such that women high in Emotionality and men high in Extraversion would be more likely to enact a slower strategy.

Table 2
Hierarchical multiple regressions.

	β	*SE*	*p*	*F*	R^2	Δ R^2
				27.86***	0.36***	
Honesty-humility	0.20	0.048	< 0.001			
Emotionality	0.31	0.050	< 0.001			
Extraversion	0.38	0.046	< 0.001			
Agreeableness	0.03	0.046	0.55			
Conscientiousness	0.21	0.046	< 0.001			
Openness	−0.05	0.044	0.22			
				16.48***		0.03*
Honesty-humility X sex	−0.08	0.048	0.12			
Emotionality X sex	−0.03	0.044	0.43			
Extraversion X sex	−0.11	0.046	0.02			
Agreeableness X sex	−0.06	0.049	0.26			
Conscientiousness X sex	0.11	0.045	0.02			
Openness X sex	−0.01	0.043	0.92			
				10.71***	0.13***	
Honesty-humility						
Sincerity	−0.04	0.055	0.43			
Fairness	0.28	0.055	< 0.001			
Greed avoidance	−0.06	0.054	0.24			
Modesty	0.18	0.057	0.002			
				6.91***		0.02
Sincerity X sex	−0.05	0.056	0.39			
Fairness X sex	0.02	0.055	0.67			
Greed avoidance X sex	0.04	0.054	0.44			
Modesty X sex	−0.14	0.056	0.02			
				18.38***	0.21***	
Emotionality						
Fearfulness	0.01	0.055	0.91			
Anxiety	−0.19	0.054	< 0.001			
Dependence	0.10	0.055	0.07			
Sentimentality	0.44	0.060	< 0.001			
				10.26***		0.00
Fearfulness X sex	−0.05	0.051	0.31			
Anxiety X sex	−0.00	0.052	0.94			
Dependence X sex	−0.01	0.055	0.86			
Sentimentality X sex	0.02	0.056	0.71			
				19.36***	0.22***	
Extraversion						
Social self-esteem	0.25	0.058	< 0.001			
Social boldness	−0.08	0.055	0.15			
Sociability	0.18	0.054	0.001			
Liveliness	0.20	0.056	0.001			
				12.14***		0.02*
Social self-esteem X sex	0.02	0.057	0.67			
Social boldness X sex	0.05	0.054	0.83			
Sociability X sex	−0.17	0.054	0.002			
Liveliness X sex	0.00	0.055	0.96			
				11.53***	0.14***	
Conscientiousness						
Organization	0.18	0.058	0.002			
Diligence	0.14	0.062	0.03			
Perfectionism	0.11	0.064	0.08			
Prudence	0.02	0.058	0.70			
				7.02***		0.01
Organization X sex	0.07	0.057	0.22			
Diligence X sex	−0.04	0.062	0.52			
Perfectionism X sex	0.07	0.065	0.29			
Prudence X sex	0.03	0.058	0.66			

Note. Sex coded as 1 = Women and − 1 = Men. *F*, R^2, and Δ R^2 values are significant at $^{*}p < .05$, $^{**}p < .01$, and $^{***}p < .001$.

2. Method

2.1. Participants

The current study included 366 participants recruited from undergraduate psychology courses at a university in Ontario, Canada. Of the sample, 52.2% (n = 191) were women and 45.4% (n = 166) were men. The mean age of the sample was 21.02 years (SD = 4.91) with a range of 17–53 years. In terms of race, 80% (n = 293) of the sample identified as Caucasian. Internal consistency values for all scales and subscales as assessed by Cronbach's alpha are provided in Table 1. Some of the data from this project were published elsewhere in an article about the relations between LHS and dark personality traits (Davis, Visser, Volk, Vaillancourt, & Arnocky, 2019).

2.2. Measures

2.2.1. The mini-K

This is a 20-item scale by Figueredo et al. (2006) that participants respond to on a 7-point Likert scale, with response options ranging from 1 (*Disagree strongly*) to 7 (*Agree strongly*). The Mini-K measures LHS along a single continuum with higher scores being indicative of a slower strategy and lower scores signaling a faster strategy. This instrument measures seven facets of LHS including: insight, planning, and control, parent relationship quality, family contact/support, friends contact/support, general altruism, religiosity, and attachment to romantic partners. Example items include: “While growing up, I had a close and warm relationship with my biological mother” and “I have to be closely attached to someone before I am comfortable having sex with them.” Because undergraduates were sampled, the item “I have a close and warm relationship with my own children” was removed. Participants were prompted to respond “not applicable” for the “I have a close and warm romantic relationship with my sexual partner” if they did not currently have a romantic or sexual partner.

2.2.2. HEXACO 100 personality inventory revised

This 100-item inventory, developed by Lee and Ashton (2018) assesses six dimensions of personality, including: Honesty-Humility (e.g., “I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed”), Emotionality (e.g., “I feel like crying when I see other people crying”), Extraversion (e.g., “I prefer jobs that involve active social interaction to those that involve working alone”), Agreeableness (e.g., “I tend to be lenient in judging other people”), Conscientiousness (e.g., “I plan ahead and organize things, to avoid scrambling at the last minute”), and Openness (e.g., “I'm interested in learning about the history and politics of other countries”). Participants responded along a 5-point Likert-type scale ranging from 1 (*Strongly agree*) to 5 (*Strongly disagree*).

2.3. Procedure

Undergraduate students were invited to participate in the “Dark Personality Study.” If interested, participants were directed to an online survey hosted by SONA™, where they consented to complete the online questionnaire. Upon completing the survey, participants were compensated with partial course credit. This study was approved by an appointed institutional ethics committee.

3. Results

Data were analyzed using SPSS (version 20). Descriptive statistics were generated for each measure (see Table 1). Histograms, skewness, and kurtosis statistics indicated that all variables approximated a normal distribution. Independent samples *t*-tests were conducted to examine sex differences. Women scored significantly higher than men on the Mini-K, Honesty-Humility, Emotionality, and Conscientiousness, and men scored higher than women on Openness.

3.1. Multiple regression analyses

A hierarchical multiple regression including all of the HEXACO dimensions in one model was carried out to test our hypothesis. Sex and the mean centered predictor variables were entered at the first step of the analysis. At the second step, mean centered interaction terms were

entered. If there was evidence of a significant interaction, simple slopes analysis was conducted, which involved creating new interaction terms (Aguinis, 2004). To reduce the risk of Type I errors, only thefacets belonging to personality dimensions that varied significanlty with LHS were tested. To this end, separate hierarchical multiple regressions were calculated with each model including the four facets belonging to a particular dimension... The Benjamini and Hochberg (1995) correction was also used to control for the false discovery rate associated with multiple comparisons.

Honesty-Humility, Emotionality, Extraversion, and Conscientiousness, all positively predicted a slower LHS, whereas Agreeableness and Openness did not (Table 2). Sex was found to moderate the relations between Extraversion and Conscientiousness with LHS. Simple slopes analysis showed that there was a stronger positive relation between Extraversion and a slower strategy for men, $\beta = 0.49$, $p < .001$, relative to women, $\beta = 0.27$, $p < .001$. In contrast, there was only a significant positive relation between Conscientiousness and LHS for women, $\beta = 0.33$, $p < .001$, but not for men, $\beta = 0.12$, $p = .07$.

The Honesty-Humility facets of Fairness and Modesty positively predicted a slower strategy, but not Sincerity and Greed Avoidance. Sex moderated the relation between Modesty and LHS. There was a significant positive relation between Modesty and a slower LHS for men, $\beta = 0.31$, $p < .001$, but not for women, $\beta = -0.01$, $p = .87$. The Sentimentality facet of Emotionality positively predicted a slower strategy, whereas Anxiety negatively predicted LHS (i.e., a faster strategy). The other facets (Fearfulness and Dependence) did not significantly vary with LHS. These results were not moderated by sex. The Extraversion facets of Social Self-Esteem, Sociability, and Liveliness positively predicted a slower strategy, whereas Social Boldness did not. Sex was found to moderate the relation between Sociability and LHS. There was a significant positive link between Sociability and a slower LHS for men, $\beta = 38$, $p < .001$, but not for women, $\beta = 0.03$, $p = .64$. The Organization facet of Conscientiousness positively predicted a slower strategy, whereas Diligence, Perfectionism, and Prudence did not significantly vary with LHS. None of these facets were moderated by sex. Analyses for the facets of Agreeableness and Openness can be found in the Supplemental Materials for informative purposes.

4. Discussion

Life history theory and the HEXACO model are perspectives from which the adaptive costs and benefits of personality can be examined. Building on the work of others (e.g., Manson, 2015), the differential relations between the Mini-K (Figueredo et al., 2006) and the HEXACO dimensions were examined at the multivariate level. The moderating role of sex on these relations was also tested, which is important given that women and men differ reliably across many life history characteristics (Geary, 2002; Kruger, 2008) and several HEXACO dimensions (Lee & Ashton, 2004; Manson, 2015). Additionally, the HEXACO traits are multidimensional constructs with lower-order facets, some of which have been shown to vary in relation to LHS (Manson, 2015, 2017). However, to our' knowledge, researchers had yet to consider the multidimensionality of Honesty-Humility, Agreeableness, and Conscientiousness in relation to LHS.

Results showed that Honesty-Humility, Emotionality, Extraversion, and Conscientiousness were significant positive multivariate predictors of a slower strategy, but Agreeableness and Openness were not. Extraversion was the strongest predictor of a slower strategy relative to other dimensions, which is consistent with previous research (Strouts et al., 2017). These results suggest that, among young adults, Extraversion may be the principal component of personality that accounts for a slower LHS when assessed with socially-oriented measures, like the Mini-K (Figueredo et al., 2006). Higher Extraversion in young adulthood is particularly important for predicting happiness and well-being in older age (core elements of a slower strategy), which may help to account for this result (Gale, Booth, Mottus, Kuh, & Dreary, 2013). The increased happiness of Extraverts may be driven by their greater social efficacy and social capital (Takabe & Murata, 2016), which could map on to a slower LHS. Sex, however, moderated the relations between Extraversion and Conscientiousness in predicting a slower strategy. Although Extraversion predicted a slower LHS for both sexes, this association was stronger for men relative to women. This makes sense given that Extraversion may be more important for men in acquiring mates, allies, and social status (Ashton & Lee, 2007; Nettle, 2005). In contrast, the link between Conscientiousness and a slower strategy was only significant for women and not men. Conscientiousness seems particularly important for positive maternal behavior, including being more attentive to and expressing more positive emotions toward children (Smith et al., 2007). And lower Conscientiousness in women, but not men, is related to intentions of committing infidelity (Buss & Shackelford, 1997). These findings may account for why Conscientiousness is important for women's enactment of a slower LHS.

The Fairness and Modesty facets of Honesty-Humility positively predicted a slower strategy. This suggests that a reluctance to exploit others (Fairness) and the absence of entitlement (Modesty) are the key facets of Honesty-Humility linked to a slower LHS. Sex moderated the relation between Modesty and a slower strategy, such that Modesty for men predicted a slower strategy, whereas it did not for women. This seems surprising given that immodesty appears to benefit men more than women in career success and being perceived as a competent leader (Budworth & Mann, 2010). Perhaps Modesty enables men to affiliate with and gain positive regard from higher status same-sex others. Modesty might also help men focus on caring for their family versus pursuing individual benefits. Alternatively, stronger selective pressures may have acted on women to express Modesty regardless of life history speed, which is supported by women's consistently higher Modesty scores (Lee & Ashton, 2004). Greed Avoidance did not predict a slower LHS, which makes sense given that a slower strategy is linked to the pursuit of status through social and material gains (Figueredo et al., 2006). Yet, it is interesting that Greed Avoidance was not a negative predictor of LHS (e.g., linked to a faster LHS). Sincerity (being candid) also failed to predict LHS, which was unexpected. The lack of significant associations between LHS with both Greed Avoidance and Sincerity suggest that people high (e.g., the Amish) or low on these traits (e.g., psychopaths) could both potentially engage in faster LHSs.

The Emotionality facet of Sentimentality predicted of a slower strategy, whereas Anxiety predicted a faster LHS, which accords with previous findings (Manson, 2015). Sex did not moderate the above relations. For the facets of Extraversion, Social Self-Esteem, Sociability, and Liveliness all positively predicted a slower strategy, whereas Social Boldness did not. This is in slight contrast to previous work, where only Sociability positively correlated with a slower strategy when considering the residual variance accounted for by this facet (Manson, 2017). Sex was found to moderate the relation between Sociability and the Mini-K, such that for men this facet predicted a slower LHS, whereas it did not for women. Perhaps more sociable men possess a greater ability to attract, meet, and maintain relationships with friends, allies, and mates, given the importance of Extraversion in promoting romantic relationships and coalitional alliances among men (Ashton & Lee, 2007). Alternatively, selection may have acted more strongly on women to be sentimental irrespective of their life history speed.

The Organization facet of Conscientiousness positively predicted a slower strategy but, Diligence, Perfectionism, and Prudence did not. Across all HEXACO facets, Organization has been shown to be the only correlate (besides Fearfulness) of valuing security (safety and societal stability; Anglim, Knowles, Dunlop, & Marty, 2017). This could account for why seeking order and structure in one's physical surroundings (Organization) is particularly relevant to a slower LHS.

Some limitations of the current research should be emphasized. The use of an undergraduate sample limits the generalizability and representativeness of the reported findings. The cross-sectional nature of

the research prevented an examination of the longitudinal stability of the HEXACO traits/facets with LHS across time within participants. The psychometric measure of LHS used (the Mini-K; Figueredo et al., 2006) is an abridged version of a more comprehensive instrument (the Arizona Life History Battery; Figueredo et al., 2004), which precluded an analysis of the facets of LHS (e.g., experiences in close relationships). However, the Mini-K has been shown to be a psychometrically sound self-report measure (Figueredo et al., 2015). Some of the HEXACO facet subscales also had lower internal consistencies (e.g., Liveliness). Nonetheless, these Cronbach alpha values were consistent with those reported by other researchers (e.g., Lee & Ashton, 2018). Effect size indicators (e.g., standardized regression coefficients) for significant predictors across multiple regression analyses also ranged from small to moderate. Although consistent with personality research (Gignac & Szodorai, 2016), this shows that a myriad of other personal (e.g., self-regulation, future time perspective), developmental (e.g., childhood adversity, nutrition), and social-ecological factors (e.g., poverty, limited reproductive autonomy) may contribute to LHS as a complex multi-dimensional construct (Del Giudice et al., 2015; Figueredo et al., 2006). For instance, Honesty-Humility increases significantly from 18 to 60 years of age, particularly the Fairness facet (Ashton & Lee, 2016), and may play a more prominent role in the slower LHSs of older adults. This implies that our results may be specific to young adults freely living in a relatively stable and secure economic context; underscoring the importance of follow-up research on different demographic groups to gauge how generalizable the results from the current research are.

5. Conclusions

In the current study, the HEXACO traits and many of their lower-order facets were shown to vary in their life history "speed" at the multivariate level. High HEXACO Honesty-Humility, Extraversion, Emotionality, and Conscientiousness appear to be important to a slower LHS in young adults when assessed with socially-oriented measures of LHS (e.g., the Mini-K; Figueredo et al., 2006), whereas Agreeableness and Openness do not. Extraversion was moderated by sex, such that this dimension was more important for men's execution of a slower LHS, whereas Conscientiousness only appeared relevant for women's enactment of a slower strategy. Higher levels of the Honesty-Humility facet of Fairness, the Emotionality facet of Sentimentality, and the Extraversion facet of Social Self-Esteem may be the primary drivers of a slower strategy, whereas elevated levels of the Emotionality facet Anxiety may relate centrally to a faster strategy. Only the Extraversion facet of Sociability and the Honesty-Humility facet of Modesty were significantly moderated by sex, both of which appear to be more important for men's execution of a slower LHS relative to women.

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