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## Life History strategy, Psychopathic Attitudes, personality, and general intelligence

Paul Robert Gladden\*, Aurelio José Figueredo, W. Jake Jacobs

Department of Psychology, University of Arizona, P.O. Box 210068 Tucson, AZ 85721-0068, United States

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#### ABSTRACT

This study attempted to replicate recent findings that Life History (LH) strategy predicts neither Psychopathic Attitudes (psychopathy, risk-taking, and mating effort) nor general intelligence (g). Further, we examined relations among LH strategy, Psychopathic Attitudes, and the Big Five to compare and contrast the personality correlates of these latent factors. Participants completed a measure of general intelligence (APM-18) and completed questionnaires measuring life history strategy, psychopathy, Risk-Taking Attitudes, mating effort, and Big-Five personality traits.

An exploratory factor analysis detected two uncorrelated latent factors: The *K*-Factor and Psychopathic Attitudes. Neither the *K*-Factor nor Psychopathic Attitudes predicted general intelligence. In contrast, the *K*-Factor correlated positively with Openness, Conscientiousness, Extraversion, Agreeableness, and negatively with Neuroticism. Psychopathic Attitudes correlated positively with Extraversion and negatively with Agreeableness. We discuss the implications of these data for LH theory and its relation to intelligence and antisocial traits.

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#### 1. Introduction

Life History (LH) theory provides an ultimate-level functional account of the individual variation in personality, psychopathy, and general intelligence (g) (Rushton, 1985, 2004; Figueredo et al., 2006; Mealey, 1995). LH theory predicts that a positive manifold of personality traits form a coordinated and adaptive reproductive strategy. Mealey (1995), for example, suggested psychopathy is one such LH trait, part of a frequency-dependent "cheater" strategy specialized for short-term mating. Recent work confirms that a single common "slow LH", or "K-Factor", loads on a diverse array of self-reported LH traits including sexual, parental, cognitive, and social indicators, together comprising a functionally coordinated LH strategy (e.g., Figueredo, Vásquez, Brumbach, & Schneider, 2004, 2007; Figueredo et al. 2005, 2006). Although traits such as Machiavellianism, risk-taking, mating effort (Figueredo et al., 2005), and psychopathy (Gladden, Sisco, & Figueredo, 2008), have been reported to function as inverse indicators of the K-Factor, Sefcek (2007) recently reported that risk-taking, mating effort, and psychopathy function as indicators of an uncorrelated "Psychopathic Attitudes" factor rather than the K-Factor. In addition, Brumbach, Figueredo, and Ellis (in press) recently described a longitudinal study of adolescents and young adults in which the overall slow LH factor and a Social Deviance factor did not correlate. Finally, Sefcek (2007) found that the K-Factor was uncorrelated

with general intelligence (*g*), in contrast to early predictions based on LH theory (Rushton, 1985, 2004).

We sought to replicate and extend Sefcek's (2007) data with respect to the relations among the K-Factor, Psychopathic Attitudes, and general intelligence (g). To that end, we introduce LH theory and its predicted relation to psychopathy, risk-taking, mating effort, and general intelligence. We then review recent work on the relation between LH strategy and the Big Five. We discuss the implications of this work for LH theory in relation to psychopathy and general intelligence and limitations of the current approaches.

#### 1.1. Life History theory

LH theory (Figueredo et al., 2006) (also called Differential *K the-ory* when applied to human variation; Rushton, 1985) is a mid-level evolutionary theory that predicts strategic tradeoffs in an organism's allocation of limited bioenergetic and material resources toward essential fitness components. In this zero-sum game, resource investments in one fitness component necessarily detract from the pool of resources available for investment in other fitness components. For example, investing in mating, the production of a large number of offspring (e.g., time and energy of finding mates) necessarily limits investing in parenting, time, energy, and resources devoted toward each offspring. An individual's investment in fitness components can be partitioned into somatic effort (allocations toward continued individual survival) and reproductive effort (allocations toward production of new individuals). Reproductive

<sup>\*</sup> Corresponding author. Tel.: +1 5206220575; fax: +1 520 621 9306. E-mail address: pgladden@email.arizona.edu (P.R. Gladden).

effort can be further partitioned into mating effort, parental effort, and kin investment (Figueredo et al., 2006). According to LH theory, strategically effective LH strategies produce the greatest rates of return on one's investment in the currency of reproductive fitness payoffs.

Over evolutionary time, different environmental circumstances selected for identifiable patterns of resource investments. For example, unstable and unpredictable environments, in which mortality risks are uncontrollable, naturally select organisms that sexually mature early, reproduce early, and produce a large number of offspring because organisms that develop late, delay reproduction, or have fewer offspring in such environments tend to produce fewer viable offspring. Similarly, investing in high levels of parental care under such conditions is maladaptive because unstable and uncontrollable environmental risks decrease average offspring survival, thereby decreasing an organism's (fitness) parental investment payoff. Conversely, stable and predictable environments in which mortality risks are controllable naturally select organisms that sexually mature late, delay reproduction, produce few offspring, and invest in high levels of parental care.

Rushton (1985) described early sexual maturation, early reproduction, and the production of large numbers of offspring with little parental investment as an r-selected or "fast" LH strategy. He described late sexual maturation, delayed reproduction, and producing few offspring with high levels of parental investment in each as K-selected or "slow" LH strategy (see also Kaplanand Gangestad (2005)). Other predicted LH traits include interbirth intervals, gestation length, litter size, duration of lactation, age of weaning, age of first mating, number of offspring, body weight, brain weight, longevity (Rushton, 1985, 2004; Figueredo et al., 2006). Across mammalian species, many of these LH traits load highly on a single common latent factor (Rushton, 2004), as predicted by LH theory.

LH theory predicts that traits (including personality traits or intelligence) that facilitate a coordinated (adaptive) fast or slow LH strategy tend to be selected together and, therefore, to co-occur. Put another way, LH theory predicts that apparently diverse arrays of traits will exhibit a positive manifold as predicted by LH theory (Figueredo et al., 2006).

By LH theory, selection works against uncoordinated sets of LH traits. For example, in an unpredictable and uncontrollable environment with high mortality risks, an individual who constantly plans for the future and inhibits its behavior based on those future plans may lose mating opportunities. Other individuals who do not inhibit their behavior based on future planning will outcompete such individuals. When one is likely to enjoy a short life, investing long-term in future reproduction is maladaptive whereas discounting the future is adaptive under the same circumstances. Thus, discounting the future is one feature expected to co-vary with other fast LH traits.

Figueredo et al.(2004, 2005) and Figueredo, Vásquez, Brumbach, and Schneider (2007) reported data compatible with these predictions. These authors described a diverse set of LH traits (planning, mother/father relationship quality, support and contact with family and friends, attachment to romantic partners, altruism towards one's kin, friends, community, and religiosity) that cluster on a single latent "K-Factor", indicating a slow LH strategy. This highly heritable (0.65) slow LH factor, correlates with increased mental and physical health (Figueredo et al., 2004, 2007) because, as predicted by theory, slow LH individuals exhibit increased somatic effort which are investments aimed at future survival.

When applied specifically to humans, LH theorists predict associations among putative LH traits such as general intelligence, criminality, and personality traits (Bogaert & Rushton, 1989; Rowe, 1996; Rushton, 1985, 2004; Ellis, 1988; Figueredo et al., 2006; Mealey, 1995).

#### 1.2. LH strategy and Psychopathic Attitudes

LH theory predicts that "socially deviant" behavioral traits including psychopathy, general criminality, social rule-following, and group altruism are characteristics of a coherent "fast" (r-selected) LH strategy (see e.g., Ellis, 1988; Figueredo et al., 2006; Mealey, 1995; Rushton, 1985). Consistent with this idea, self-reported mating effort (a predicted feature of fast LH strategy) is associated with delinquency (Charles & Egan, 2005; Rowe, Vazsonyi, & Figueredo, 1997) and a diverse array of antisocial traits (e.g., Figueredo et al., 2005). A single latent common factor that loaded positively on adult attachment to romantic partners, childhood attachment to one's biological father, and investment from one's biological father also loaded negatively on mating effort, Machiavellianism, and risk-taking propensity. More recently, Gladden, Sisco, et al., 2008; Gladden, Welch, & Figueredo, 2008 reported that a single latent factor loaded negatively on primary psychopathy, secondary psychopathy, Machiavellianism, aggression, shortterm sexual strategies, and mating effort and positively on a short-form version of the Arizona Life History Battery (ALHB) measuring long-term sexual strategies, and perceived mate value. This latent LH factor predicted significantly lower levels of sexually coercive behavior, consistent with the idea that slow LH strategies relate inversely to criminality. These results suggested that antisocial personality traits (psychopathy, risk-taking, Machiavellianism, and mating effort) are a part of a fast LH strategy.

In light of these data, we were surprised when Sefcek (2007) found that self-reported psychopathy, mating effort, and risk-taking propensity form a second latent factor rather than correlating with an earlier version of the *ALHB* on a single *K*-Factor. Further, the two factors were uncorrelated with each other and with general intelligence. In the present study, we sought to replicate this finding.

#### 1.3. Life History strategy and general intelligence

LH theory predicts a strong positive relation between slow LH strategy and general intelligence (Rushton, 1985, 2004). In doing so, LH theory offers an ultimate-level functional explanation for the maintenance in genetic variability (heritability) of general intelligence across human evolutionary history. Though the idea has its critics (Cullen, Gendreau, Jarjoura, & Wright, 1997), general intelligence is thought to relate to criminality (Herrnstein & Murray, 1994). If criminality is a LH trait and if criminality is negatively correlated with intelligence, then the K-Factor should correlate positively with intelligence. Consistent with this idea, brain size is a correlate of a diverse variety of LH traits and there have been demonstrations of bivariate correlations between general intelligence and single LH traits (e.g., family size; Rushton, 1985, 2004). Nevertheless, no one has shown that, as predicted by LH theory, general intelligence clusters with an array of aggregated LH traits. Further, Sefcek (2007) reported general intelligence apparently does not relate to slow LH, as measured by the ALHB<sup>1</sup> (Figueredo, 2007). We sought to replicate this theoretically important finding.

#### 1.4. Life History strategy and the Big Five

LH theory also offers an ultimate-level functional explanation for the existence and continued maintenance of personality variation across human evolution. Supporting this idea, Figueredo et al. (2005) reported that slow LH correlated positively with a higher-order Extraversion factor and correlated negatively with higher-order

<sup>&</sup>lt;sup>1</sup> Available from the author upon request.

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