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Positive assortative pairing in social and romantic partners: A cross-cultural observational field study of naturally occurring pairs

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ABSTRACT

This paper examines the degree of similarity in assortative pairing for life history strategy, mate value, delinquency, and sensational interests for same-sex friends compared to opposite-sex romantic partners in persons across a variety of nations that are culturally quite different, in spite of some sharing the same language. Specifically, we sampled participants from: (1) Tucson, Arizona, United States of America; (2) Hermosillo, Sonora, Mexico; (3) San Jose, Costa Rica; and (4) Leicester, England. Due to the structure of the data and the nature of our research questions, we used a relatively new statistical tool called the Continuous Parameter Estimation Model (CPEM; Gorsuch, 2005), in order to estimate and compare assortative pairing coefficients between the four cultures. In all four cross-cultural western cultures replications, the inter-rater reliabilities, perceived assortative pairing coefficients, and actual assortative pairing coefficients of all four traits were generally substantial in magnitude, positive, and statistically significant among pairs of social partners as well as pairs of romantic partners.

1. Introduction

Affinities, relationships, and sexual pair-bonds form assortatively between persons when an individual recognizes, consciously or implicitly, apparent similarities or differences in their potential mate or non-sexual companion. Most affinity is positively assortative, meaning that persons prefer to bond more closely to persons with traits similar to their own (Miller, 2001). Rushton (1989) proposed that these preferences may reflect detection of genetic similarity, as selecting individuals similar to oneself promotes higher altruism towards one's partner and any potential offspring, and the theoretical implications of this theory for life history strategy have subsequently empirical support (Figueredo & Wolf, 2009). Research indicates that persons select on a variety of direct (i.e., weight gain propensity) and indirect (i.e., blood group) similarity indices (Rushton, 2009). Further, if the evolution of positive assortative pairing were indeed ultimately driven by genetic similarity (for a detailed mathematical model, see Wolf & Figueredo, 2011), we would expect that degree of pairing on perceived similarities should be proportional to the heritabilities of the shared traits, and this novel prediction from Genetic Similarity Theory has been supported empirically by systematic comparisons of the spouses and friends of monozygotic and dizygotic twins using biometric structural models (Rushton & Bons, 2005).

The current study sought to examine the degree of similarity in assortative pairing for life history strategy, mate value, delinquency, and sensational interests for same-sex friends as compared to opposite-sex romantic partners in persons across a variety of nations that, while sharing the same language, are culturally quite different. To determine whether the known associations between these measures could be replicated across these nations to facilitate testing for potential differences in assortative pairing coefficients between cultures, we applied a novel statistical approach called the Continuous Parameter Estimation Model (CPEM; Gorsuch, 2005).

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2. Selection of traits

2.1. Life history strategy

Life History Theory involves personal trade-offs in the bioenergetic and material resources that can be invested into individual survival (somatic effort) and genetic replication (reproductive effort). Psychometric studies of behaviors which express these qualities find that these tradeoffs form a single latent higher-order life history construct, *K* (Figueredo, Vásquez, Brumbach & Schneider, 2004, 2007). Figueredo and colleagues (2005) explored their measurement distillation of life history (the Mini-K questionnaire), finding persons higher in *K* had stronger attachments to their biological father and adult romantic partner attachment, whereas the Mini-K was negatively related (and closer to the r-related pole of the dimension) for mating effort, Machiavellianism, and risk taking. In addition, low *K* was associated with being higher in trait Neuroticism and Psychoticism. These findings suggest that the life history speed (*r*-*K*) dimension is psychologically very powerful, and that such information can be easily gathered with a 20-item self-report scale that asks general questions about a person's life history. More broadly, the Mini-K scale provides a theoretically-relevant measure that integrates ideas and findings from evolution, behavioral genetics, personality and reproductive sexual strategies into one consilient model (Figueredo et al., 2006). The ACE heritability of the Mini-K has recently been estimated at $h^2 = .33$ (Woodley of Menie & Madison, 2015).

2.2. Mate value

The process of forming a mating partnership with another person involves making choices regarding the person sought, and the tactics used to make this bond more likely; both inform the degree to which a person values their mate (Penke, Todd, Lenton, & Fasolo, 2007). Perceived mate value is a concept that examines the reciprocal social and sexual exchange with another person, and whether these exchanges have costs or benefits for the individual, and is measurable using the Mate Value Inventory (MVI; Kirsner, Figueredo, & Jacobs, 2003). Persons rate themselves, their partner, an attainable potential long term partner, or an ideal long term partner on a list of attributes including attractiveness, faithfulness, sexual enthusiasm, intelligence, and health. The MVI has been found to be highly reliable and correlates with attitudes to the opposite sex, sociability, relationship history, and self-perceived physical attractiveness (Fisher, Cox, Bennett, & Gavric, 2008). Research with the MVI demonstrates that males tend to be more variable than females regarding desired ideal partners, reflecting the greater variability and probability of short-term sexual strategies in males compared to females (Kirsner et al., 2003), and that persons higher in perceived mate value are themselves more exacting in the mate value required for a potential partner (Edlund & Sagarin, 2011). Mate value is expected to be highly heritable in that the evolved mechanisms for the perception of mate value are hypothesized to have been selected to be especially sensitive to the genetic load of deleterious pleiotropic mutations being carried by an individual (Miller, 2001).

2.3. Delinquency

Despite being ostensibly unattractive due to their behavior, persons who commit criminal acts are often highly reproductively successful, and this reflects their greater focus on short-term sexual strategies and the reproductive effort end of the *K* continuum (Beaver, Wright, & Walsh, 2008; Duntley & Shackelford, 2008). Delinquency is strongly associated with mating effort (Charles & Egan, 2005; Rowe, Vazsonyi, & Figueredo, 1997), mild antisocial acts and interests, and may function as a fitness indicator, particularly for less grave antisocial conduct which more reflects foraging and "inner-city hunter-gathering" than genuinely homicidal inclination. While antisocial contagion is often used to explain the basis of much behavior in this area, these processes can be equally seen as indirectly heritable (Blazei, Iacono, & Krueger, 2006) whereby a person with an antisocial trait forms a relationship with another person with similar traits, potentially passing on genes associated with these tendencies into the resulting offspring. Though assortative pairing in a romantic context for personality is sometimes low (e.g., $r = .15$), it is higher for intelligence ($r = .33$; van Leeuwen, van den Berg, & Boomsma, 2008), and substantial for antisocial behavior ($r = .54$; Krueger, Moffitt, Caspi, Bleske, & Silva, 1998); the ACE heritability and environmentality coefficients for having antisocial friends is $h^2 = .58$, $c^2 = .34$, $e^2 = .08$ (Beaver et al., 2009). Estimates vary across studies, but one representative estimate obtained from a meta-analysis conducted across various different methods puts the ACE heritability of delinquency, criminality, and antisocial behavior at about $h^2 = .40$ (Miles & Carey, 1997).

2.4. Sensational interests

Finally, sensational interests (i.e., an interest in topics with a militaristic, morbid or sensationalist theme) can be regarded as markers of potential antisocial tendencies and behavior in both general and clinical populations (Egan, 2004; Egan, Austin, Elliot, Patel, & Charlesworth, 2003; Egan et al., 1999). After 10 years of research with the Sensational Interests Questionnaire (SIQ), and its more narrowly focused sister-instrument, the Sensational Interests Questionnaire-Revised (SIQ-R, Egan et al., 2005; Weiss, Egan, & Figueredo, 2004) it seems the key predictor within sensational interests is militarism, which, independently of low agreeableness, predicts antisocial acts such as an adolescent's desire to carry a weapon, teenage delinquency, and physical aggression (Barlas & Egan, 2006; Charles & Egan, 2009; Egan & Campbell, 2009). To see an interest in aggression-related topics as inherently pathological is to reject the adaptive function that such knowledge may have imparted for most of humanities' pre-history when the struggle for survival was generally rather harsher than in contemporaneous times. If persons with such interest patterns have a slight competitive advantage in survival relative to their peers, this quality would bestow selection pressure, and might even make the person appear more attractive to members of the opposite sex, over time generating intrasexual competitive displays. This competitive and selective advantage may explain the positive association between sensational interests and mating effort (Weiss et al., 2004), which has been observed cross-culturally in the United States of America, United Kingdom, Mexico, and Chile (Egan et al., 2005). As with mate value, we have no direct estimate of the heritability of sensational interests, but they are theoretically expected to be highly heritable (if only by means of reactive heritability) insofar as these serve as reliable and valid indicators of higher levels of mating effort and delinquency, which are highly heritable traits (Rowe, 1994; Rowe & Rodgers, 1989; Rowe, Vazsonyi, & Figueredo, 1997).

3. Selection of naturalistic observational methods

Naturalistic observational studies provide a much needed source of data regarding social and romantic relationships. A naturalistic design can expand our understanding of concepts and variables identified in a laboratory setting in order to illustrate how those variables are exercised in the real-world. Naturalistic

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