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# Personality and evolutionary strategies: The relationships between HEXACO traits, mate value, life history strategy, and sociosexuality

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ABSTRACT

Evolutionary approaches to understanding personality variation have proposed how general personality factors might be reframed in terms of adaptive tradeoffs, but many of these explanations remain speculative. The present research evaluates the relationships between the HEXACO general personality traits and evolutionarily-relevant variables tied to individual differences in mating characteristics and strategies. Participants (n = 209) completed measures of the HEXACO traits, mate value, life history strategy, and sociosexual orientation (short-term mating orientation and long-term mating orientation). There was good support for a number of hypothesized relationships between mating-relevant personality constructs and HEXACO traits. Additionally, the constructs of mate value, life history strategy, and sociosexuality were significantly intercorrelated, indicating that they are not independent. Further work is needed to clarify those relationships, and differential relationships with HEXACO traits can aid in this work.



## 1. Introduction

Evolutionary approaches to psychological phenomena have often been perceived as being focused on species-typical characteristics in humans. In particular, there is a dimension of evolutionary approaches that emphasizes the universal, species-typical cognitive architecture which characterizes humans as a group (e.g., Tooby & Cosmides, 1992). A focus on only this aspect can sometimes lead to an incorrect inference that variations between individuals (such as personality) are necessarily downplayed (e.g., Buller, 2005). Individual differences, in fact, represent a valuable domain for the application of evolutionary concepts even as they present new challenges (Buss, 2009; Buss & Hawley, 2010; Marsh & Boag, 2013; Michalski & Shackleford, 2010). When different environmental conditions are experienced by a species-typical cognitive architecture that—by design—is sensitive to those differences, variability in individual outcomes is a common result. For example, when a person grows up in a highly dangerous environment, one adaptive result can be an adaptively up-regulated level of anxiety; safe environments can engender relatively low dispositional anxiety.

Research that has sought to address these issues has demonstrated that certain personality traits do show some predictable relationships with evolutionarily-relevant variables (Figueredo et al., 2005; Gladden, Figueredo, & Jacobs, 2009; Jonason, Li, Webster, & Schmitt, 2009; Manson, 2015). Thus, the study of personality from an evolutionary perspective can not only help to explain human behaviors but it can also serve as a topic which allows for more complete and complex models of how evolution by natural selection operates.

Several psychologists have already taken steps towards the reframing of personality traits in terms related to fitness (Ashton & Lee, 2007; Nettle, 2006). Ashton and Lee's (2007) HEXACO personality structure in particular, a variation of the five-factor model that utilizes six traits, proposes how trait dimensions could be viewed as broad adaptive trade-offs. Specifically, higher Honesty–Humility and Agreeableness may yield gains through greater cooperation in reciprocal altruism contexts (Trivers, 1971). Higher Agreeableness could also increase the risk of being exploited by others, though, whereas individuals with greater Honesty–Humility may miss out on possible gains through exploitation. Emotionality may represent a trade-off in behaviors related to kin altruism (Hamilton, 1964) and self-serving behaviors, where higher Emotionality (i.e., greater emotional responses and connections with others, rather than detachment) would encourage greater inclusive fitness at the loss of possible individual self-interest gains. In contrast, low Honesty–Humility and low emotionality are associated with status-driven risk taking (Ashton, Lee, Pozzebon, Visser, & Worth, 2010). Extraversion, Conscientiousness, and Openness to Experience can all be seen as affording potential gains through different kinds of endeavors (social, task-related, or idea-related) at the expense of time, energy, or risk of social status.

This reframing of personality traits helps to illustrate the roles they might play in an adaptive context, but little has been done thus far to explore the accuracy of such ideas. It may not yet be possible to test the full

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scope of Ashton and Lee's (2007) presentation of the HEXACO traits, but an initial step is to assess how these traits relate to other variables which are explicitly based on evolutionary concepts. The goal of this study thus is to investigate how the HEXACO dimensions correlate with other evolutionary-based constructs of individual differences: mate value, life history strategy, and sociosexuality.

### 1.1. Personality and mate value

Choosing a mate (and being chosen as a mate) is both important and necessary for reproduction. Individuals vary in their value as potential mates and sexual selection describes the process by which members of a species evaluate and choose from potential partners. Individuals who are in a position to select a mate prefer those who demonstrate attributes that signal their genetic quality or behaviors that might confer an advantage to the prospective individual or their offspring (e.g., health, phenotypic quality, access to resources, and willingness to provide resources; i.e., have high mate value). Certain personality traits can be expected to associate with mate value because characteristic differences between individuals (as opposed to characteristics on which people are identical) serve as potential criteria for the assessment of a mate's value.

Previous research into five-factor personality traits considered desirable in a partner found that people prefer mates high in Agreeableness, Emotional Stability, and Intellect-Openness (Botwin, Buss, & Shackelford, 1997). Agreeableness may be an attractive quality in potential mates because it indicates propensity to reciprocate in exchanges and work towards goals cooperatively (Ashton & Lee, 2007). Additionally, Ashton and Lee (2007) elaborate that Agreeableness within the HEXACO model is more closely related to emotionally stable and consistent behavior than the trait Emotionality (the relative counterpart of Emotional Stability in the HEXACO). Intellect-Openness corresponds to the HEXACO Openness to Experience and this dimension may contribute to an individual's mate value through its moderate association with intelligence and creativity; qualities that could act as fitness indicators (Nettle, 2006). Such interpretations of Agreeableness and Openness to Experience suggest that these traits will demonstrate a positive relationship with mate value. These and other predictions are summarized in Table 1.

There may also exist sex differences in how personality traits associate with mate value. Parental investment theory (Trivers, 1972) suggests that, because human females bear a greater obligate expense in reproduction (egg production, internal gestation, and many years of nursing), compared to males, females would be expected to generally be more stringent in their criteria for an acceptable mate. (The size of this differential should also be stronger for short-term mating contexts than for long-term relationships, because males may also invest quite heavily in the later context.). Research on human mate preferences supports this notion, finding that females more strongly prefer attributes in potential mates that may help alleviate the burden of reproduction: social status, financial resources, dependability, stability, education, and intelligence (Shackelford, Schimtt, & Buss, 2005). Botwin et al. (1997) noted that status and resources are often closely linked in males and suggest that females may desire personality traits that contribute to hierarchy ascendance and resource acquisition. Extraversion is a strong candidate here for its known association with social status and exploratory behaviors (Anderson, John, Keltner, & Kring, 2001); however, Conscientiousness and Intellect-Openness have also been found to positively relate with successful hierarchy negotiation (Botwin et al., 1997; Lund, Tamnes, Moestue, Buss, & Vollrath, 2007). Because of the importance of status and resources to male mate value, Extraversion, Conscientiousness, and Openness to Experience are expected to correlate more strongly with male mate value than in female mate value. These predictions are also summarized in Table 1.

### 1.2. Personality and reproductive strategy

Another way of investigating personality traits in the context of evolution is to see how traits fit into broader patterns of behavior like life history strategy. Figueredo et al. (2005) notes that natural selection acts to merge traits into functional composites. If the variation of human personality traits is maintained by mechanisms of balancing selection, then traits may combined into more expansive adaptive strategies. Del Giudice (2012) proposes that the natural fluctuations of sex ratios could explain the diversity of human personality traits which regulate the success of behaviors related to short-term and long-term mating strategies. In some ways this adds a superordinate level of conceptualization, above personality variations and explaining those variations. Two constructs that have been suggested at this level are life history strategy and sociosexual orientation.

#### 1.2.1. Life history strategy

Life History Theory (MacArthur & Wilson, 1967) encapsulates how individuals allocate their energy and resources towards different fitness strategies. An individual may pursue a “fast” life history strategy or a “slow” life history strategy. A fast strategy focuses more on immediate use of resources to acquire of mates and produce of offspring, investing proportionally little in those offspring. A slow strategy focuses more on long-term allocation of resources, for themselves, mates, and their offspring, with proportionally more investment in those individuals.

Previous research by Figueredo et al. (2005) investigated how personality traits relate to life history strategy using aggregate trait dimensions that incorporate multiple inventories. Figueredo et al. (2005) found that greater Neuroticism correlated with a faster life history strategy. This suggests that greater Emotionality (the HEXACO counterpart of Neuroticism) may correspond to a faster life history strategy due to the dimension's association with impulsivity and avoidance behaviors. In contrast, though, Manson (2015) did not find a consistent relationship between emotionality and life history strategy. Figueredo et al. (2005) also found that their aggregated dimension of Psychoticism, which included negative loadings

**Table 1**
Correlations between HEXACO personality traits and the measures of mate value (divided by gender), life history strategy, and sociosexual orientation (measured as short-term mating orientation [STMO] and long-term mating orientation [LTMO]). Exact probability values are provided in the Supplemental Materials.

| | | | | Sociosexuality | |
|---|---|---|---|---|---|
| | Higher Male Mate value | Higher Female Mate value | Slower Life History strategy | STMO | LTMO |
| Honesty/Humility | .150 | −.025 | [↑] .208** | [↓] −.425** | [↑] .269** |
| Emotionality | [↓] −.149 | [↓] .021 | [?] .281** | [↓] −.381** | [↑] .268** |
| Extraversion | [↑] .407** | .448** | [?] .534** | .006 | .216** |
| Agreeableness | [↑] .213 | [↑] .157 | [↑] .237** | [↓] −.026 | [↑] −.008 |
| Conscientiousness | [↑] .385** | .275** | [↑] .460** | [↓] −.299** | [↑] .316** |
| Openness | [↑] .189 | [↑] .124 | .159* | −.101 | .159* |

Symbols in brackets before correlations indicate the predicted positive [↑] and negative [↓] relationships between variables.
* Correlations are significant at $p < .05$.
** Correlations are significant at $p < .01$.

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