An evolutionary account of the prevalence of personality traits that impair intimate relationships

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A B S T R A C T

Personality traits such as low emotional stability and low empathy have a considerable negative impact on an individual's mating success. This impact is more severe in cases where such traits reach extreme levels and are classified as personality disorders. Several evolutionary models have been proposed to account for the relative high prevalence of these apparently maladaptive traits. The present paper contributes to the explanatory power of these models by putting forward the hypothesis that in ancestral human societies selection pressures on personality traits that predict success in intimate relationships had been weak. The reason why is that mate choice had been controlled by parents, mainly fathers, who did not place considerable weight on these traits in a prospective son- and daughter-in-law, and who were willing to impose substantial costs on their children in order to benefit themselves from a marriage alliance.

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1. Introduction

Personality constitutes an important predictor of intimate relationship formation, and therefore, a major predictor of reproductive success (Buss & Hawley, 2010; Eysenck & Wakefield, 1981). Evolutionary forces act on the frequencies of alleles that code for traits, including personality traits, depending on their fitness consequences. Fitness refers to reproductive success, which equals to the contribution to the gene pool of the next generation that is made by an individual. Accordingly, the fitness of an allele can be understood as the number of copies in the next generation that a copy in this generation leaves (Nettle, 2009). Consequently, strong selection pressures would be exercised on alleles that predispose for personality traits which impair the formation of intimate relationships, removing them from the gene pool. This prediction is not confirmed however, as such traits appear to be relatively common in the population (Gutiérrez et al., 2015), which raises the question why selection forces have allowed such high prevalence rates. One answer is that, although these traits have costs, they also have benefits that balance these costs (Nettle, 2006). The present paper aims to extend this hypothesis, by arguing that in an ancestral context the reproductive costs of these traits had been low, predominantly because mate choice was regulated, and because less emphasis was placed on intimacy and pleasant co-living and more on protection and survival.

1.1. The prevalence of traits that impair formation of intimate relationships

Individual differences in personality are among the best predictors of relationship success (Eysenck & Wakefield, 1981). More specifically, research on mate preferences consistently finds that people place substantial emphasis on specific aspects of a prospective mate's personality (Buss, 2003; Buss & Hawley, 2010). In particular, traits such as kindness and exciting personality top individuals' mate preferences across several studies (Buss, 2003). These findings suggest that individuals who lack such traits will face a limited success in the mating market. Although most research efforts have focused on the positive or desirable end of the continuum when examining mate preferences, research on the negative aspect of the continuum indicates that specific personality traits act as serious impediments in intimate relationship (Jonason, Garcia, Webster, Li, & Fisher, 2015). For example, research on dating relationships suggests that narcissism is linked to lower relationship commitment (Campbell & Foster, 2002). Similarly, lower levels of self-esteem (Swann, 1996), higher levels of neuroticism (Donnellan, Larsen-Rife, & Conger, 2005; White, Hendrick, & Hendrick, 2004) and higher levels of psychoticism (Diener & Seligman, 2002) predict low relationship success. A recent paper that employed evidence from several studies, found that people view bad personality traits in potential partners as deal breakers across all relationship contexts (Jonason et al., 2015).

These findings suggest that individuals who have specific personality dispositions will face severe difficulties in the mating market. On the basis of the current literature, we can nominate low empathy, low agreeableness, low emotional stability, being self-centered and having a low need for intimacy, to be some of the main traits that impair

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success in intimate relationships (Intimate Relationships Impairing Personality Traits or IRIPTs). When these traits become more rigid or extreme, they classify as personality disorders, and have an even higher negative impact on the formation of intimate relationships.

In more detail, personality disorders are characterized by enduring maladaptive patterns of behavior, cognition, and inner experience, exhibited across different contexts and deviating markedly from those accepted by the individual's culture. These patterns develop early, are inflexible, and are associated with significant distress or disability (American Psychiatric Association, 2013). Personality disorders can be understood as maladaptive and/or extreme variants of personality traits (Trull & Durrett, 2005), but it has to be said, that they also exhibit high comorbidity with other mental health diagnoses such as major depression (Zimmerman, Rothschild, & Chelminski, 2005). Accordingly, there are factors at play other than just extreme variants of traits that need to be taken into consideration in understanding personality disorders.

Personality disorders constitute a major impediment to the formation of intimate relationships. For instance, one study found evidence that borderline personality disorder is associated with relationship dysfunction (Daley, Burge, & Hammen, 2000). Other studies have shown borderline personality disorder to be associated with a lower likelihood of being married (Zimmerman & Coryell, 1989) and a higher number of breakups of important relationships (Labonte & Paris, 1993), as well as lack of a romantic partner (Bernstein et al., 1993). Several studies indicate that narcissistic personality disorder constitutes a major impediment to establishing long-term intimate relationships (for a review see Campbell & Miller, 2011). An inability to form long-lasting intimate relationships constitutes a general characteristic of personality disorders, which results into lower reproductive success due to reduced mating opportunities (Dobbert, 2007).

Personality has an important genetic component, with its heritability to be estimated at approximately 0.40 (Plomin, DeFries, McClearn, & McGuffin, 2008); meaning that almost half of the variability in personality between individuals is explained by differences in their genotypes. Furthermore, behavioral geneticists have estimated the heritability of mental disorders, including personality disorders, to range from 0.2 to 0.8 (Jang, Livesley, & Vernon, 1996; Keller & Miller, 2006; Lykken, 1995; Nigg & Goldsmith, 1994). For instance, one study estimated the heritability for Cluster B personality disorders as follows: 0.69 for the antisocial, 0.67 for the borderline, 0.71 for the narcissistic and 0.63 for the histrionic personality disorder (Torgersen et al., 2012). These findings indicate that the difference between a person suffering from the disorder and a person not suffering from it, is to a large extent explained by the differences in their respective genotypes.

In summary, there is evidence that specific alleles in the contemporary gene pool predispose for personality traits that constitute a major impediment to mating success. In effect, alleles predisposing for personality traits that impair mating success would suffer from low fitness and would be selected out of the population. However, this does not appear to be the case: based on the findings of five studies spanning over a 20-period, the prevalence of personality disorders in the United States was estimated to be at least 10%, and for international data prevalence rates varied from 6.1% to 13.4% (Sansone & Sansone, 2011 see also Lenzenweger, Lane, Loranger, & Kessler, 2007). There is no systematic study to examine the prevalence of personality traits that impair intimate relationships without classifying them as disorders, but these are expected to be in much higher prevalence than personality disorders (Gutiérrez et al., 2015; Nettle, 2006). The high prevalence rates constitute an evolutionary paradox: why selection forces have not eliminated from the gene pool the alleles that predispose for personality traits that impair intimate relationships?

Several evolutionary models have attempted to provide an answer. The most prominent ones argue that alleles for these traits provide fitness benefits outside the sphere of mating, which balance their reproductive costs (Gutiérrez et al., 2015; MacDonald, 1995, 1998; Nettle, 2006). It has also been argued that more extreme variants of such traits

are likely to be the outcome of harmful mutations that selection forces had not time to remove from the population (Keller & Miller, 2006). Still, given the considerable negative impact of these traits, particularly of personality disorders, on reproductive success, this line of argumentation requires further development. Previous literature has focused on identifying the benefits that balance the costs (e.g., Nettle, 2005, 2006; Wilson, 2001). In contrast, this paper focuses on the cost side, proposing that during most of the period of human evolution the costs of traits that impair intimate relationships had been low, so that even moderate adaptive benefits in other domains could balance them, allowing in effect a higher prevalence rate in the population.

In more detail, it is going to be argued that alleles that predispose for IRIPTs and personality disorders have experienced weak selection pressures, predominantly because during human evolutionary time, individuals' mate choice was controlled by their parents, particularly by fathers. Fathers were willing to compromise on personality traits in a future in-law, which predict good intimate relationships in order to make marriage arrangements beneficial for themselves. It will also be argued that, in an ancestral context, less emphasis was placed on traits that predict intimacy and good interpersonal contact, and more on traits that predict resource provision and protection. Before developing these arguments further, the three main models that potentially account for the prevalence of maladaptive traits and disorders in the population need to be discussed.

2. Evolutionary models

2.1. Balancing selection

The predominant view on the prevalence of psychological disorders among evolutionary psychiatrists and evolutionary psychologists is the balancing selection model (Allen & Sarich, 1988; Barrantes-Vidal, 2004; Longley, 2001; Mealey, 1995). According to this model, alleles that predispose an individual towards a disorder in certain instances may increase fitness. There are several ways this can happen, one being the heterozygote advantage.

In sickle-cell anemia those who are homozygous for the common allele (AA) at the b-hemoglobin locus are susceptible to malaria, whereas those homozygous for the less common allele (aa) are more likely to die from sickle-cell anemia. Nevertheless, heterozygotes (Aa) have an advantage over the other two as they do not develop anemia, and they are much more resistant to malarial infection. It has been argued that certain mental disorders such as schizophrenia (Huxley, Mayr, Osmond, & Hoffer, 1964), bipolar disorder (Wilson, 1998) and depression (Wilson, 2001) are maintained in the population by such heterozygote advantage.

In frequency-dependent selection, the fitness of alleles increases as they become rarer. For instance, Mealey (1995) argued that psychopathy persists in the population at a low frequency for this exact reason: Individuals with this trait increase their fitness considerably by exploiting and taking resources from others, but this trait is less effective when it becomes common in the population and others become more aware of it.

2.2. Polygenic mutation

The genetic material needs to copy itself multiple times in order to pass to future generations, which means that the human genome is susceptible to copy errors or mutations. Mutations usually decrease fitness; therefore, evolutionary forces remove them from the genome. But this process takes time, which is contingent on how harmful a mutation is; it takes longer for less harmful mutations to be removed from the population. For instance, it has been estimated that a mutation causing a 1% reduction in fitness will pass approximately through 100 individuals before it is eliminated from the population (García-Dorado, Caballero, & Crow, 2003).