

POSTER

HERITABILITY OF ARTISTIC CREATIVITY IN TWINS: SUPPORT FOR THE MENTAL ORNAMENT HYPOTHESIS

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ABSTRACT

Human creativity is broadly defined as the capacity to generate adaptive and useful ideas. From an evolutionary perspective, creativity has been theorized to function as a mental ornament, a trait shaped by sexual selection to signal genetic quality (e.g., intelligence, behavioral flexibility) in mate choice and competition. Indeed, artistic behavior is strategically displayed in courtship. Thus, if artistic creativity serves as a fitness indicator, we expect (1) significant heritability, reflecting genetic variance for sexual selection to act upon, and (2) predominant non-shared environmental influences, as ornament expression often depends on social context. We tested these predictions in a sample of 84 pairs of Brazilian twins (71 monozygotic and 13 dizygotic). Using ACE modeling, we found that 15.8% of the variance in artistic creativity was attributable to additive genetic effects, <1% to shared environmental influences, and 84.2% to non-shared environmental factors. The results are consistent with the hypothesis that artistic creativity represents a mental ornament shaped by sexual selection and modulated by contextual environmental factors. The dominance of non-shared environmental influences suggests that individual differences in artistic creativity arise largely from idiosyncratic experiences (e.g., individual opportunities, mentors, or peer feedback) rather than shared cultural or familial contexts. This aligns with sexual selection theory if artistic display is tailored to specific social niches (e.g., adapting creative output to attract particular mates or gain status within a group). Future research should include larger samples and diverse creativity measures to test the evidence base of the mental ornament theory.