Using interspecific hybridization to test a prediction of Fisher's geometric model

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1 Abstract

Fisher's geometric model of adaptation predicts that populations undergoing divergent adaptation for a given trait do so by fixing alleles that affect that trait but have pleiotropic effects on traits under stabilizing selection. Compensatory mutations fix within populations to counteract this deleterious pleiotropy. Although compensatory mutations are fixed within populations, inter-population hybridization causes them to segregate and generate phenotypic variation. A empirically untested prediction of Fisher's model is that populations that the amount of phenotypic segregation variance released by hybridization is positively correlated with the amount of divergent in traits under divergent selection. I systematically searched the literature for studies that measured phenotypic traits in two parent taxa and their F_1 and F_2 hybrids in a common environment, and find patterns consistent with those made by Fisher's model. My results suggest that the genes used during divergent adaptation are pleiotropic and that potentially deleterious segregation variance accumulates systematically as populations diverge.

2 Introduction

The paper starts off with a citation of [1] wackoy!

References

[1] K. A. Thompson, B. B. C. Husband, and H. Maherali, "No influence of water limitation on the outcome of competition between diploid and tetraploid Chamerion angustifolium (Onagraceae)," *Journal of Ecology*, vol. 103, no. Ramsey 2011, pp. n/a–n/a, 2015.