

## **Misconceptions about indirect genetic effects in behavioral evolution**

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Indirect genetic effects are increasingly recognized among behavioral biologists as having important influences on the expression of individual phenotypes. Most behavioral biologists accept the notion that phenotypes are influenced, not only by an individual's genes and the environment the individual experiences, but also by the genes and phenotypes expressed by an individual's social partners. Less widely appreciated, however, is the fact that the fitness consequences of such interactions, i.e., the actual selection intensity on particular behavioral traits, depends on (1) how fitness is quantified, (2) which individuals actually experience fitness gains, and (3) whether interactions with social partners enhance or ameliorate selection intensity. I describe how misconceptions in these three areas undermine current hypotheses regarding the evolution of behavioral phenotypes associated with mate choice, parental care and cannibalism. I also explain how simple quantitative considerations can resolve these misconceptions and demonstrate the fundamental importance of indirect genetic effects in behavioral evolution.