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## Hybrid vigor in rock pools

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Excessive inbreeding can be deleterious to a population, resulting in inbreeding depression. Gene flow through metapopulations can be amplified by hybrid vigor, if the hybrid offspring of immigrants and residents have a competitive advantage. In the January 18 *Science*, Ebert *et al.* describe experiments that test this theory (*Science* 2002, **295**:485-488). They studied the colonization and extinction dynamics of local populations of the water flea *Daphnia magna* in rock pools on islands along the Scandinavian Baltic Sea coast. Ebert *et al.* examined the significance of hybrid vigor by introducing immigrant genotypes into 22 *Daphnia* populations and monitoring the success of hybrid offspring throughout the summer. They cleaned out pools and refilled them with 200 individuals from the original populations (residents) and added immigrant clones, and then followed populations using several alloenzyme marker loci. Their genotyping results clearly showed that outbred offspring displayed the greatest fitness. Ebert *et al.* obtained similar results in experiments carried out in the laboratory. This study reports a 35-fold increase in gene flow, making a strong case for hybrid vigor theories.

## References

1. Gene flow and the geographic structure of natural populations.
2. *Science*, [<http://www.sciencemag.org>]