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## The show-off hypothesis: the evolution of large-game hunting, and signalling like peacocks

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Large-game hunting in human hunter-gatherers is a counter-intuitive behaviour. Despite low daily success rates and large proportions of sharing, hunter-gatherers invest in large-game hunting over the less-wasteful strategy of small-game hunting. Where investment in small-game hunting could provide a more reliable and consistent source of direct benefit to one's offspring, large-game hunting is more ecologically and environmentally dependent, and is a source of benefit to all members of a society, being shared unbiased to the hunter himself. Hypotheses attempt to explain this as reciprocity or altruism, wherein a hunter will share meat obtained as an investment in future returns from receiving beneficiaries of that meat. However, observations show that there is no correlation between current success rates with future obtained goods from others. The Show-Off Hypothesis is an alternate explanation of the evolution of large-game hunting, stating that such hunting behaviours act as a costly signal of one's quality as a mate. Better hunters are deemed as better mates, and hence obtain more paternities in a society. We investigate this, considering the effect of societal status on the evolution of the strategy of large-game hunting. We develop and present a model that defines measures of hunting success and the survival benefit of care, in order to shed light on previously unquantified effects of status on strategic choice. Within this model, we demonstrate the effect of maladaptive competition on male hunting strategic choice, and provide measures of the trade-off that drives the behaviour of large-game hunting.

**Primary author:** LOO, Sara (University of Sydney)

**Presenter:** LOO, Sara (University of Sydney)

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