

PROPOSAL: Enhanced Learning Foundation \$30,000 Biosocial Research 2016

Evolutionary Theory applied to Social World

1—**Species selection.** What factors are associated with differential reproduction and survival of species over time, in particular genetic vs investment? To what degree does biased investment in some ant species, termites, many birds (via male parental investment) improve species survival? What other non-random factors besides major niche inventions (multi-cellularity) or occupations (dinosaur-vacated world) have been involved?

2—**Heterogamety.** Why are some species (birds, moths) female heterogametic (XY) and some (mammals, flies) male? I believe the key intervening variable is sex differences in recombination. A large detailed literature has grown up which with intriguing exceptions appears to support the argument first made by Trivers 1988 (Sex differences in rates of recombination and sexual selection. In R. Michod and D. Levin (eds.) *The Evolution of Sex: An Examination of Current Ideas.*)

3—**The evolutionary logic of honor killings.** Inbreeding is commonly imagined to favor sociality as degrees of relatedness climb toward 1 in all directions. It aint necessarily so. Indeed increased relatedness to other clan members , e.g. via cousin marriage, *decreases* the relative value of one's own offspring, making sacrifice on the (patrilineal) alter more likely.

4—**Homosexuality.** Repeated work has shown that human male homosexuality has a genetic component on the X and 8th chromosomes. Other positive correlates, e.g. with number of older brothers, and reproduction of maternal (female) relatives, suggest the possible importance of sex antagonistic genes, harmful when found in males but beneficial when found in females. Female homosexuality is more often associated with bisexuality and low genetic contribution. Transexuality is a brand new phenomenon made possible by advances in controlling phenotypic expression, so that some children are already receiving hormone therapy to adjust their external phenotype to their inferred internal one. Crucial topic ripe for a review.

5—**Human evolutionary genetics.** A series of findings in the last ten years demonstrate that cultural evolution did not decrease the power of natural selection but tended to have the opposite effect, greatly heightening the power of selection, coincident with orders of magnitude increases in density associated especially with agriculture but beginning well before. Would love to review this work.

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