

Using Evolutionary Selection to Help Understand Humanity

Background Facts

A. The evolutionary process minimally includes reliable inheritance of genes but with rare mutations (inheritable changes in genes and chromosomes); selection (differential survival of genetic materials); repeated episodes of genetic drift or sampling error (accidental losses or gains of genetic material); and isolation of populations, hence their divergence and the consequent biological diversity.

B. Selection is the principal guiding force of the evolutionary process. Some evidence is: changing directions of selection inevitably changes directions of change; causes of mutations and causes of selection remain independent; only selection remains consistent for long periods, hence can explain long-term trends.

C. Evolutionary selection is differential genic survival as a result of differential reproduction by organisms. It is inevitable and has long-term cumulative effects, some of the most important of which, such as development (ontogeny) of the organism, are so astonishingly complex that they remain largely beyond our analytical reach.

D. The hostile forces of nature that cause evolutionary selection are predators, parasites, diseases, food shortages, climate, and weather.

E. There are four ways to facilitate reproduction: (1) help self (grow, develop, learn, avoid danger, become a better adult -- reproducer), (2) produce offspring, (3) help offspring, (4) help other relatives.

The Challenge: Why, in Terms of Evolutionary Selection, Do Humans Have The Following Traits or Tendencies, and Why in This Combination?

1. Long lifetime (unique among primates)
2. Menopause (unique to humans?)
3. Extensive nepotism to non-descendant relatives (unique in humans in involving detailed distinguishing of a wide array of different relatives)
4. Concealed ovulation (unique to humans?)
5. Monogamous tendencies (unique for male mammals living in multi-male groups)
6. High paternal investment directed at own offspring (unique for male mammals living in multi-male groups)
7. Altricial juvenile (unique among primates)
8. Long juvenile life (unusual; probably unique among vertebrates when combined with altriciality)
9. Huge (social?) brain (unique at least in degree)
10. Enormous learning capacity and rate (unique in degree)
11. Ecological dominance (becoming own principal hostile force: unique)
12. Intergroup competition; war (unique in degree, kind, importance)
13. Male cooperation in multi-male groups with paternal care directed to own offspring: honoring of pair bonds -- part of the start toward morality? (unique)
14. Direct and indirect reciprocity -- outgrowth of nepotism? (unique)
15. Consciousness, scenario-building -- predicting others' responses (unique at least in degree)
16. Observation and memory combined with conscious design and representational ability: written language, the arts (unique at least in degree)
17. Testing of logic and social skills and super-supplier of social information (?) by identifying and constructing social surprises and incongruities: humor (humans, chimpanzees, bonobos?)
18. Conscience, morality, religion, and the concepts of a supernatural, rewards and punishment after death, and a source of conscious design extrinsic to humans -- a cause of complexity and source of social unity not linked to evolutionary selection -- yet (all of these unique to us?)