

## Are Some Humans Phylogenetically More Advanced Than Others?

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This book establishes human paleopsychology as the science of phylogenetically primitive social behavior. Placed in opposition are: "gut-level experiencing. . . ruled by emotions" and "rational. . . detached, objective thinking" (p. 120). Along this continuum (or up the hierarchy) human behavior can be scaled from "primitive to advanced" (alternatively, "animal to human"). Empirical studies show that raters are able to agree among themselves in applying these judgments to a variety of phenomena. Bailey argues that it is activity in the different parts of the "triune brain" laid down during the evolutionary climb up the phylogenetic ladder from reptiles to mammals to modern human which mediates whether the behavior being manifested is primitive or advanced. While orthodox social scientists in particular may recoil from notions they believe have been discredited (e.g., rational thought equals evolutionarily advanced), Bailey presents a massive sweep of the literature from the ancient Greeks to nineteenth century forensic psychology to modern sociobiology to support, in strikingly novel form, the old idea of human-as-beast. Certainly the phenomena to which he refers require explanation.

The main focus of the book is on universality and within-person variability. Thus many examples are provided of how circumstances can lead to "progression" or "regression" (mostly the latter) up or down the hierarchy. For example, in discussion of why one man will aggressively rape and another will not, Bailey writes "proneness to rape is a universal male characteristic. . . Any stress or strain that weakens the thin veneer of culture and morality will increase the probability of social deviations of all types, including rape" (p. 457).

The book stimulates the imagination and provides many bridges between disparate literatures. One of its greatest contributions, over and above explicating the notion of primitive-advanced, is to make those of us applying evolutionary principles to complex human behavior think more about the conceptual nervous system. All behavior is a result, obviously, of immediately preceding brain activity; even cultural factors have to be represented in the brain to have an effect. (It is a major error to juxtapose the "biological" with the "environmental" when the dichotomy in-

tended is between "genetic" and "environmental" both of which are necessarily mediated biologically).

The question of whether categories like primitive-advanced are applicable to different behaviors is related to the issue of whether evolution is progressive. Bailey discusses a number of approaches for scaling phylogenetic progress in the conceptual (and actual) nervous system, including measuring the number of "excess neurons" available for information processing after body functioning has been dealt with (i.e., the "encephalization quotient" or the amount of extra brain tissue in relation to expected brain tissue estimated from body size); various ratios of neocortical-to-subcortical brain matter; complexity of brain organization; and ultimately, neocortical hegemony over subcortical centers and the behaviors emanating therefrom, e.g., flexibility, foresight, self-control. He concludes: "with progress so construed, it seems reasonable, and certainly intuitively appealing, to speak of certain species as being higher or lower than another" (p. 125).

The issue is inevitably raised of whether some people may be more advanced than others. Although individual and group differences are touched on, as in the discussion of the relation between brain size and IQ (which is a low positive; Passingham, 1982), Bailey avoids confronting this topic and he also remarkably soft-pedals the whole nature-nurture issue. Too many twin and adoption studies have been carried out, however, showing genetic influences on not only antisocial behavior, but also on altruism, intelligence, psychopathology, and strength of the sex drive (all about fifty percent heritable; Loehlin et al., 1988). Moreover, evidence exists that many primitive behaviors have a tendency to be clustered together in the same person (low IQ, high sexuality, high aggressiveness, poor pair-bonding techniques) and that they covary to some extent with morphological variables (brain size, gamete production, speed of physical maturation). This complex may be ordered by a phylogenetic continuum of life-history reproductive strategies. Although these strategies were outlined in some of Bailey's most frequent references (e.g., Passingham, 1982; Wilson, 1975), the author does not mention them. This may have been an oversight for they map rather well onto his analysis.

### *r/K* Reproductive Strategies

The symbols *r* and *K* originate in the mathematics of population biology and refer to two ends of a continuum involving a trade-off between egg production and parental care. The continuum seems to imply a move from simple *r*-type animals producing thousands of eggs but providing no parental care, to more complex *K*-like animals producing very few offspring but providing lavish care over a long

life-span. In cross-species comparisons, the  $r/K$  strategies are found to underlie a suite of correlated characteristics including litter size, birth spacing, speed of physical maturation, sexual precocity, encephalization, social organization, and altruism (Wilson, 1975). Primates are all relatively  $K$ -strategists, and humans are the most  $K$  of all. What seems to follow, however, is that some people are more  $K$  than others (Rushton, 1985).

Generalizing from the animal literature to human differences, the more  $K$  the family, the greater should be the spacing between births, the fewer the number of offspring, the lower the rate of infant mortality, the more stable the family system, and the better developed the parental care. The more  $K$  the person, the larger should be the period of gestation, the higher the birthweight, the more delayed the onset of sexual activity, the older the age of first reproduction, the longer the life, the higher the intelligence, the more social rule following the behavior, and the greater the altruism. Diverse organismic characteristics, not otherwise relatable, are presumed to covary along the  $K$  dimension.

Evidence for the expected covariation among the  $K$  attributes has been found in several studies, including from the field of anti-social behavior covered so extensively in Bailey's book. Thus Ellis (1988) contrasted the characteristics of criminals who, because they are lower in altruism and social organization can be considered to represent the  $r$ -strategy, with the general population representing the  $K$ -strategy. The former were found to have shorter gestation periods (more premature births), a more rapid development to sexual functioning, a greater copulatory rate outside of bonded relationships (or at least a preference for such), less stable bonding, lower parental investment in offspring (as evidenced by higher rates of child abandonment, neglect, and abuse), and a shorter life expectancy.

Additional evidence for  $r/K$  theory comes from the comparison of human populations known to differ in egg production, namely, in terms of having a  $K$  life history or being "phylogenetically advanced," mothers of dizygotic (two-egg) twins < mothers of singletons; lower socioeconomic < higher socioeconomic; and Negroids < Caucasoids < Mongoloids. While the monozygotic twinning rate is nearly constant at about 3 1/2 per 1,000 in all groups, dizygotic twinning (caused by the release of two eggs at once and representing the  $r$ -strategy) occurs more frequently among lower than among upper socioeconomic status women, and the rate per 1,000 births among Mongoloids is < 4; among Caucasoids, 8; and among Negroids > 16 (Bulmer, 1970). Evidence for the expected pattern of covarying traits has been found in these populations (Ellis, 1988; Rushton, 1988). Thus mothers of dizygotic twins, compared to mothers of singletons, are found to have a

lower age of menarche, a shorter menstrual cycle, a higher number of marriages, a higher rate of coitus, a greater fecundity, more wasted pregnancies, an earlier menopause, and an earlier mortality (Rushton, 1987).

## Conclusion

A greater emphasis on genetic variance and an even firmer commitment to the comparative method (both pioneered, after all, by Charles Darwin) can be expected to advance knowledge of human paleopsychology. The best way to understand mechanisms is to study differences. Bailey's book boldly points out the areas where pine trees must be cleared if the trail is to be built.

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