

# Strategic Application of Human Development Applying Positive Psychology

## Evolution of the Human Psyche

### 7.1 Introduction

The purpose of this lesson is to develop and test hypotheses about the process and pattern by which the human psyche evolved, and to seek to understand why humans, and humans alone, differ strikingly in mentality from their closest relatives - and evidently from all other organisms. Understanding the human psyche is a key to understanding human sociality:

- 1) as it relates to the behaviour of individuals in different circumstances and after different kinds of learning experiences or developmental events and
- 2) as it yields variations in cultural patterns in different environments, and following different histories, including extreme and complex phenomena such as the rise of nations.

By the human 'psyche' I mean the entire collection of activities and tendencies that make up human mentality. I include concepts such as:

- 1) **consciousness** and all of its correlatives or components, such as sub-consciousness, self-awareness, conscience, foresight, intent, will, planning, purpose, scenario-building, memory, thought, reflection, imagination, ability to deceive and self-deceive, and representational ability;
- 2) **cognition** (i.e. learning, logic, reasoning, intelligence, problem-solving ability);
- 3) **linguistic ability**;
- 4) **the emotions** (grief, depression, elation, excitement, enthusiasm, anger, fear, indignation, embarrassment, despair, guilt, uncertainty, etc.);
- 5) **personality traits** (stubbornness, pliancy, subservience, timidity, persistence, arrogance, audacity, etc.).

One can analyze human mentality by:

- a) morphological and physiological studies of the brain and its functions
- b) psychological and psychoanalytical investigation of behaviour and its underlying motivations and other correlates;
- c) inquiries into artificial intelligence, including modeling with machines or mathematics;
- d) archaeological and anthropological analysis of fossils and artifacts (focusing primarily on the most direct possible evidence and the *pattern* of evolutionary change);
- e) comparative study of humans and other animals, especially close relatives, combined with adaptive modeling (utilizing primarily predictiveness from knowledge of the *process* of evolutionary change). The last method is the one principally employed here.

First, a unique selective situation is postulated to account for humans departing as far as they have, psychically and in other regards, from their closest living relatives, and it is compared to alternative hypotheses. The human psyche is then characterized in terms of the probable reproductive significance of its different aspects, thereby generating additional hypotheses about its selective background. Finally, an effort is made to test the hypotheses generated by the first and second parts of the discussion.

## **7.2 The Postulated Selective Situation - Background of The Hypothesis**

There is probably general agreement that explaining human evolution is to a large extent a question of understanding how human mental attributes evolved. The problem is not only why brains evolved to be bigger and intellects to be more complicated, but also why they became so dramatically different from those of our closest living relatives.

Humphrey (1976) suggested that the selective situation was primarily a social one, with evolving humans providing their own selective challenge; as with others who have made suggestions in this direction, however (see references below), he did not explain what forces caused humans to continue to live under the social conditions responsible for the expenses of intense competition and the resultant manipulations, deception, and favouring of social cleverness that he and others postulate. Thus, he did not account for the fact that humans alone have followed an evolutionary pathway leading to what he called a 'runaway intellect'.

Humans are not just another unique species, rather they are unique in many and profound ways - that is, in many attributes, and also in ways that unexpectedly set them apart from all primates, all mammals, or even all life (e.g. Alexander and Noonan 1979; Tooby and DeVore 1987; Wilson 1975; Wrangham 1987). For example, rapid evolution usually means more speciation, but humans, whose brains are regarded as having evolved according to an 'autocatalytic' model - increasingly rapidly - during at least the past two million years (Godfrey and Jacobs 1981; Stringer 1984), have no living close relatives. By this I mean that there are no closely similar or sister species, no congeneric species, no interfertile species, no species, even, with the same number of chromosomes. Why? Why do we have to go back two, five (or more) million years to find the most recent phylogenetic juncture with our nearest *living* relatives (Ciochon 1987)?

Human social groups are also unique (currently) in being huge and socially complex, while also having all individuals both genetically unique (excepting monozygotic twins) *and expecting to reproduce*; and only humans (apparently) play competitively, group-against-group (currently on a large scale). Although we became a virtually world-wide, highly polytypic species with numerous geographic variants, until recently those different variants have not easily mixed or lived in sympathy; and there seems to be no universally accepted evidence that multiple species of hominids ever lived together. With increases in the world population of humans, moreover, we did not come to live in a single, huge, dense, amorphous, universally beneficent population; rather, we have always lived with tense national boundaries, patriotism, xenophobia, and almost continual and destructive intergroup competition and conflict. Today we have a terrible international arms race as a central horror in our lives. We have at least been pruned by evolution so as to allow these things to happen. How were we so primed?

### **7.3 Components of the Hypothesis**

The most unpredictable and demanding aspects of the environment of evolving humans have always been its *social* aspects, not the physical climate or food shortages, as is often implied. The human psyche was designed primarily to solve *social* problems within its own species, not physical and mathematical puzzles, as educational tests and some concerns of philosophers might cause us to believe. Darwin (1859,1871), Keith (1949),

This hypothesis implies that even the solving of mathematical, physical, and nonhuman biotic problems had its central significance (in the broadest sense, its reproductive rewards) in social contexts. (For example, Lenneberg (1971) argues

that 'mathematical ability may. . . be regarded as a special case of the more general ability that also generates language. . .' and Burling (1986) that 'the. . . evolution of the. . . capacity to learn and use highly complex language is unlikely to be explained primarily by any subsistence or technological advantages that language offers. Rather, language probably served social purposes'.) In other words, this hypothesis rejects the notion that complex intellects evolved because they saved early humans from starvation, predation, climate, weather, or some combination of such challenges.

All other organisms have solved these kinds of problems, in a variety of ways, without complex human-like intellects. If humans solve such ordinary problems in extraordinary ways, I am suggesting, it is because they are using an intellect evolved in a different context (For comparative purposes, Isaac (1979) lists six hypotheses bearing on human evolution:

- ◆ 'hunting' hypothesis
- ◆ 'seed-eating' hypothesis;
- ◆ 'gathering' hypothesis;
- ◆ 'food-sharing' hypothesis;
- ◆ 'developmental' hypothesis,
- ◆ 'shortened birth interval' hypothesis

Dart's is the closest to that espoused here; the others all depend on non-human biotic or physical threats as primary forces. As I am restricting it, my hypothesis also requires that human proficiency in tool construction and use is also a secondary or incidental effect of the evolution of an intellect designed to be effective in social contexts. Wynn (1979) and Gowlett (1984) discuss the relationship between the manufacture of tools, and especially the transport of materials involved in their construction, to the evolution of planning and foresight.

- ◆ Human mental abilities evolved as a result of ***runaway social competition***, an unending within-species process dependent upon interminable (and intense) conflicts of interest, compared (below) to Fisher's (1958) concept of runaway sexual selection (see Alexander 1987).
- ◆ ***Balance (or imbalance of power races)*** between social groups, either within or between (very similar) species, facilitated runaway social competition by favouring complex social living, and abilities to behave cooperatively and competitively within (and between) social groups. Such races 'trapped'

humans into social interdependence, led to within-group amity and between-group enmities, and in part created the selective situation that gave rise to our creative intellects. Humans may not be the only species to engage in social reciprocity and cooperation-to-compete (with conspecifics), but they are probably the only one in which this combination of activities is a central aspect of social life.

- ◆ These processes became paramount partly because the *ecological dominance* of evolving humans diminished the effects of 'extrinsic' forces of natural selection such that within-species competition became the principal 'hostile force of nature' guiding the long-term evolution of behavioural capacities, traits, and tendencies, perhaps more than in any other species.

#### 7.4 Ecological Dominance of Humans

The evidence for this having happened is the current ecological dominance of humans; the only problem is when and how it came about. One might ask if *the ecological dominance of humans allowed the evolution of complex intelligence or complex intelligence enabled humans to become ecologically dominant*. I would argue, rather, that the two went hand in hand, reinforcing one another at every stage, and I suggest (below) that, aside from the human presence, chimpanzees may already have attained the required dominance.

Darwin's emphasis on sexual selection to account for the evolution of many human traits is in accord with the idea presented here, if the context is expanded to include other kinds of social competition, and I believe that the current idea supports his general suggestion.

- ◆ The combination of *balance-of-power races* between human social groups,
- ◆ *Runaway social competition* and the emphasis on creative and manipulative intellects, allowed or facilitated by
- ◆ *Human ecological dominance*, can also be used to help explain the changes in social structure that occurred as human social groups expanded toward their present sizes and took the forms (bands, tribes, and nation-states - 'egalitarian', despotic, totalitarian, or democratic societies) represented across human history.

The central evolved function of the human psyche, then, is to yield an ability to anticipate or predict the future - explicitly the social future – and to manipulate it in the (evolutionary, reproductive) interests of self's genetic success. In the

hypothesis developed here, all other effects or properties of the psyche are secondary to this strategic function. This general situation came about because evolving humans: *(a) came to live in highly cooperative social groups and (b) became ecologically dominant, these two conditions together (i) reducing the significance of hostile forces of nature other than conspecifics and (ii) leading to cooperation to compete against conspecifics who were doing precisely the same thing.* In this fashion the combination of an unending runaway social competition and an unending balance-of power race was set in motion, which continues within and among human populations today. This general situation allowed and caused the radical departure of humans from their closest relatives, in psychical and other attributes.

### 7.5 Scenario-Building

A central feature of the human psyche is the construction of alternative scenarios as plans, proposals, or contingencies in a manner or form perhaps appropriately termed *social-intellectual* practice for social interactions and competitions (practice which lacks a prominent physical component). This hypothesis of *scenario-building* sheds light simultaneously on a collection of human enterprises that have seemed virtually impossible to connect to evolution - such as humour, art, music, myth, religion, drama, literature, and theatre - because they are involved in *surrogate scenario-building*, a form of division of labour (or specialization of occupation) that may be unique to humans (partly because language is required for communication of mental scenarios between individuals).

The centrality of scenario-building in human sociality (which will be related to the concept of *play*) is connected with the appearance of *rules* (hence, moral and legal systems) through (in part) the value of limiting the extent to which the elaborate and expensive scenarios (plans) of others can be thwarted by selfish acts (Alexander 1987, see also below). Finally, part of the game of human social competition involves concealing how it is played, and some of such concealment involves concealing it from one's self (*self-deception*). This in turn compounds the problem of understanding ourselves because of the difficulty of bringing into the conscious items that have been kept out of it by natural selection, most particularly items involving social motivations.

The hypothesis assumes that some version of these social functions initially drove the evolution of consciousness and other aspects of the human psyche, and that other uses of the psyche, such as in predicting or dealing with aspects of the physical universe, are (or were initially) incidental effects (in the evolutionary sense). This scenario does not preclude adaptive functions of the psyche in dealing

with nonsocial phenomena throughout human evolution, only that such functions could not have caused the evolution of consciousness, cognition, linguistic traits, and the emotions as a set of human attributes. The emphasis on manipulation and deception is because the hypothesis holds that the human psyche would not have evolved in a world dominated by truth-telling, so that its complexity is tied to its use in deception. Once efforts at deception are widespread, successful, and complicated, truth-telling also becomes difficult to identify or prove. The argument is that truth is approached only when necessary - that is, cost effective.

## **7.6 General Comments on Natural Selection**

Ultimately, there must be compatibility between our view of the functions of the human psyche and our understanding of the selective background that gave rise to it. I am going to develop the argument from the beginning, because there can be no agreement, or adequate evaluation of arguments, unless common ground has been established from the outset.

If we accept the view of modern biology that natural selection is the principal guiding force of evolution, this means, first, that to understand traits we must concentrate on their reproductive significance and discard most of the old notions about adaptive function, such as survival of the individual (at all cost - i.e. even when survival is opposed to reproductive success), benefit to the population or species (again, when there is conflict with benefit to the individual's reproduction), progress, or any kind of goal-oriented or orthogenetic trend.

We are not free to assume that genetic drift or other random events can account for elaborate attributes, just because they seem to give an unprejudiced, amoral, or value-free aspect to evolution or because they can account for minor differences between populations (Alexander 1979, 1987).

## **7.7 Rules for Applying Selective Thinking**

Continuing from this initial assumption, I assume five general rules in applying natural selection to the attributes of organisms (for the first two, see Williams 1985):

*First*, we must consider the question of *adaptation*, not according to some notion of optimality or ends to be achieved, but rather according to the now widely accepted usage, from Williams (1966), of simply This view implies that long-term trends occur because particular selective forces remain in place for long times, so that step-by- step small changes sometimes give a false retrospective appearance

of goal-oriented or orthogenetic trends. As Williams (1966) emphasized, we must also distinguish between incidental effects of traits and their evolved functions or evolutionary 'design'.

**Second**, natural selection must always work from 'last year's model' – a fact often referred to by modern biologists under concepts like phylogenetic and ontogenetic inertia, or structural laws of development and evolution. This particular rule implies that phenomena like allometry or neoteny are in general maintained as a result of selection and not in spite of it; that when such phenomena cause some kinds and degrees of evolutionary 'iner & tia', they must be presumed to have developed the potential for such effects as a result of past selection. To invoke physiological, developmental, or phylogenetic constraints to explain evolved phenomena is thus an argument of last resort.

**Third**, random events such as mutations and drift introduce noise into the adaptive process but do not guide long-term directional change.

**Fourth**, selection is more potent at lower levels in the hierarchy of organization of life (Williams 1966, 1985; Hamilton 1964, 1975; Lewontin 1970; Dawkins 1976-1986; Alexander and Borgia 1978; Alexander 1979, 1987), so that, as Williams (1966) first argued convincingly, 'most of the characteristics of organisms, including social behaviour, must be the result of differential fitness at the level of individual genotypes' (Lewontin 1966).

**Fifth**, to understand traits, it is effective, and parsimonious, to seek or hypothesize singular selective causes (or contexts or changes) in evolution, as opposed to accepting multiple ones too readily. This is so because *(1) it is difficult to falsify individual causes when multiple contributing factors are accepted uncritically; (2) single causes can be sufficient, even when multiple contributory factors are known; and (3) once a particular event, such as group-living, has occurred*, then secondary effects will appear that (especially without attention to the possibility of single sufficient causes) can be confused with the primary cause (in other words, single *different causes* may occur *in sequence* without violating these arguments).

Hypothesizing singular causes, I believe, is a way of making one's ideas maximally subject to falsification, if they are incorrect, and therefore of advancing knowledge most effectively. It is a way of going most forcefully after the actual driving forces in evolutionary change, and of unraveling most quickly and completely the actual patterns of change. This 'rule' for applying selection is the most controversial one,



and the controversy arises primarily because some see it as a way of oversimplifying causation in human social affairs. This criticism, in turn, is prevalent among those who believe that knowledge (or supposed knowledge) of history yields ideology for the future.