IV-27 Is There a Bio-Logic?

All myths use the human model of teaching and creating, yet their answers are ultimately sterile and self-referential. After suffering consequences of such tinkering, in the end we settle for a second chance. Curiously, asking limited questions turns out to provide more, and more general but factual answers to fix the limits of what is considered possible.

If politics is the art of what is attainable tomorrow, logic of survival is about the long haul. The collective experience of organisms offers lessons in dealing with the extant reality. To guide the deliberate course of human actions, the appeal of rationality of biological evolution comes from the realization that such processes are grounded in the reality of practice and nothing else. Existence of an organism *as it is* is highly contingent: Many historical events could have wiped it out and many of the branches that lead to us could have become extinct. Lessons from the evolutionary selection are forward-looking. Variation on a theme of the past successes is explored for optimizing the future, although a desired future is not guaranteed. In its appeal to the nature of *what it is* it tends towards *what it can be* in relation to the rest of the universe.

Diversity means each has validity. Beyond seeing another day, the purpose of an individual organism is in sustainable survival of the specie it represents. The potential of an individual may be somewhat unique, but one would not know unless it is expressed. What works is true enough. Beyond this regrets are minimized, and dead-ends are to be avoided. Selection is for something right - not for complete validity. Its value is in

serviceability, not the ultimate or strictly-so kind. In search of instrumental and serviceable, biological survival is shaped by deterministic laws contingent on the unpredictable circumstances.

Biological behaviors are grounded in the reality of the individuals and species, as well as all the resources they depend on. On our planet it has been at work for well over 3 billion years during which organisms come and gone. The snapshot of the present says little about why many perished on the way. Also individual functions that assure genetic viability of the species in the niche environment have little to do with the overall fitness of the individuals judged by other external criteria.

The collective experience of evolution offers lessons in dealing with reality in niches. Certain strategies have worked often enough for charting a course of action for survival, continuance, and sustainability. Individual with traits critical for survival in a niche environment flourish. Those with preexisting functions adapt. Members of species with suitable genetic makeup, and the ability to change behaviors, manage to survive. Often with minor evolutionary changes preexisting functions adapt or remove an organism as un-fit. The functional changes emerge randomly in individuals of a species over a period of time, the population genetics takes care of the rest. In the end, the snapshot of the current state of a species reflects a chaotic mix of the changes that has thus far led to the reproductive success for survival in the niche environment. In effect, evolutionary success is a measure of *fitness* to past reproductive success.

Evolutionary hypothesis building. In our hurry to arrive at a hypothesis with a reductionist mind set we pick and choose facts that fit our rationalizations. Motives, biases and rationalizations can hardly be peeled away from such actions. A fact may be correct, but for a valid hypothesis one must explore all the

relevant facts - direct, consequent, implicit, and possibly of other kinds. A fact may be true but for a valid hypothesis one must consider all the relevant facts - direct and consequent. Can the lesson from the experience intrinsic in biological evolution be used to reshape our goals? Or to choose methods for dealing with biosphere and to carry out the chores of living for some time to come? Can the lessons from the suspected disasters of biological evolution be used to reshape our goals and methods?

The pace of change is at issue. Flight in the face of danger is part of cunning and intelligence. Rapid movement also relates to an appropriate level of opportunity. At the level of human organism, the rationale for the graded processing of sensory information in stages probably lies in the use of processed output for deliberate and instinctive responses. Clearly, it is inefficient, if not impossible, to process all the current information for the choice mechanism. High information density in the sensory inputs does not permit prepositional processing or presentation. The underlying process must involve some sort of vector and parallel processing with efficient tree pruning strategies.

Irrespective of the mechanism of the input processing, it is quite likely that the past experience stored in the neuronal network acts as a template to guide the instinctive actions and behaviors without significant processing of the new input in rapid formulation of the choices for the present. By bringing in the not-present factors into the processing a role is introduced for the choices.

Room for Doubt