IV-21 Survival by Trial

All functions in an organism are expressed through thousands of protein molecules copied from the blueprint coded in its DNA which is also genetically transferred to the progeny. Changes in the blueprint are slow and random.

What cooks in the melting pot of the genes of an individual is evolutionary experience of the survivors. Survival is about what persists and is passed on to the progeny. It says little about what transpired on the way to the present. It is not that the fit survive in the long haul, but the survivors are fit for some reason. Genes give propensities for behaviors that are further influenced by nurture and beliefs.

Sneaky and devious

Here we are not talking about massive denial and deception practiced through changing standards for dress sizes. Consider the zeal with which the strongest dung-beetle guards its property and keeps its harem under the dung-pile. While the strong male guards on the surface, weaker males gain access to the harem through tunnels. Does the reality of survival lie in sneaky and devious behaviors? Think twice before concluding that attributes of sneaky and devious behaviors are seen only in the animal kingdom: An English princess of 20th century had relationships with her horse trainer and others.

Humans as tool-seekers. Evolutionary fitness of human species comes from the range of sublime to reptilian behaviors. Need for tools and institutions follow from the realization that humans are limited in important ways, and tools make up for the deficiencies. Our ability to imagine alternatives and to speculate comes from the tools that facilitate group interactions. Without tools, individuals are able to come up with far fewer relevant choices. Quick-fixes and desires are battle of ideas with chaos of choices in the public commons.

Not all ideas and choices are created equal. Individuals accept social constraints on actions because plurality of thought and behaviors often take us towards an optimum in choices. Although few seem to go beyond the tools and gizmos, through trial and error as a group we are forced to modify and move gradually from the desired to the desirable validated by practices and behaviors. A higher evolutionary purpose of the choices could be a part of the desire to see ourselves through the others. In such enterprises, rarely do we have the necessary knowledge to make informed decisions in real time, or be able to make use of the relevant knowledge at hand. Chaos does not necessarily allow for the best although that is the way people make choices.

Choices have become relevant for another reason. The genetic changes and mutations occur at random and the selection process is very slow. Foundations of modern society and its rapid evolution are based on agriculture and language. Both set the ground for a rapid transfer of knowledge to build on the known and established order. Both encourage deliberate exploration of consequences. In the give and take of social existence *we harvest what we sow*. We equate potential to seed. In many cultures mind is equated to the field, and actions to nourishment. Therein lies another ancient wisdom about conservation: *Net harvest is what*

you produce and what you put in. In such realms of thought we realize that the end products do not materialize out of nothing. Therefore, success of ordered enterprises lies in seeing and creating value in a controlled fashion.

Built on the experience of pottery, plough, wheel and fire of the last ten millennia, the devices introduced during the last two centuries have rapidly changed virtually every aspect of the environmental, social and consumer landscape to varying degrees for most people: public hygiene, clean water, antibiotics, electricity and motors, plastics and other synthetic materials, transistors, internet, as well as wide-ranging pollutions with global consequences. We have not violated laws of physical reality of matter and energy (thermodynamics), nor have we *created something out of nothing.* We know it is not sustainable, yet do not know where the current momentum will take us. Immanent or transcendental Utopia is not around the corner, nor is the End.

The past that changed the future!

Controlled fire: About 100,000 years ago in East Africa.

Domestication of animals: About 10,000 years ago between southern Caspian to India.

Agriculture: About 10,000 years ago in the plains of Euphretes, Tigris, Nile, Sindhu (Indus), Ganga (Ganges) and central China.

Pottery, wheel, cart and variations: About 8000 years ago between Iran and plains of Sindhu.

Urban organization: About 7000 years ago in East Syria and Iraq

Written language: About 5000 years ago in East Syria and Iraq to Ganga valley.

Numbers and grammar: About 5000 years ago in the Sindhu and Ganga valley.

Innovations and choices: Newer ideas and innovations propel us to do better if not perceived as unsafe, unjust or uncaring in different time and social frames. Interactions, alliances, and institutions necessitated by new inputs defy permanence. In there lie deeper concerns and wider implications. Whether continuous or abrupt, the intellectual, conceptual, and technological expectations are emotive. Against the backdrop of the longer term trend such changes often make the systems unpredictable (fractal, chaotic, fuzzy). Erratic, chaotic and periodic (cycles) behaviors follow from new inputs. Whether by growth or adaptation, we learn to deal with such uncertainties.

Material success unleashed by physical and medical sciences has made desires virtually synonymous with choices in the marketplace. It never goes according to the script as Vladimir noted in *Waiting for Godot*: *Things have changed here since yesterday*. Forces that caused the great upheavals (such as Industrial revolution) over the historical times are now being exported over a very short duration to the unsuspecting and the unprepared.

If *more is different* is the panacea of change, *buying is being* is the paradox of choices offered in the market place. Exploitation of resources is based on the strategies developed in the niche environments. For those who are adversely affected the change is inherently unfair, one-sided, and beyond the traditional checks and balances. If we instinctively react in the culture of better hunting, can we change the rate at which we change and adapt?

Room for Doubt