III-32. Knowledge: Been There

Many things are out there, but we are not looking for them in the right way. We are not following the right track. We're following what may be important tracks, but we miss many possibilities. Ideas come up from time to time. But what makes them really significant is seeing what is important and demonstrating them in a way that is convincing.

At least in the short term, the details of the social reactions to the presentation of a new thought decide who wins and who looses. Some of the disagreements will be resolved by a combination of all the usual things that scholars do: patient argument, character assassination, amassing of facts, intimidation, careful review of reasoning, mischaracterization of opponents' views, scrupulous analysis, and ridicule.

- Mixed-and-Matched quotes from E. B. Hook, 2002.

Knowledge is cognized experience. It is a way to judge reality. It is the dynamics of transition from being there to being over taken by common sense. It is the uncommon sense of doing something about it.

Resonance and dissonance are part of the dynamics that takes particulars of the prior and current experience (body of knowledge, facts, experiments, observation, data, information) on a path (direction, trend) to an understanding of the mechanisms and implications to identify useful generalizations. It is integral part of all reasoning. Obviously, individual insights do play a critical role by pointing the way as the individual efforts garner additional evidence through practice.

Dynamics of point-and-counterpoint is an integral part of individual cognition, its validation by the peers, and acceptance by the community at large for practice. The canonical knowledge may at times appear to be created by the powers-to-be (courts, experts, divine) they only put their seal of approval (affirmation) at the critical junctures. For example, at the end of the twentieth century the Catholic authorities of Rome accepted the idea that the spherical Earth orbits around the Sun. I guess it was for the benefit of the Church itself. Along the similar lines in 2003 US Supreme Court ruled that what two consenting adults do in their bed-room is not a concern of the State. Clearly, concern and caution are the watch-words for the validation. It affirms the peers with their own seal of approval.

Chaos of shared knowledge

How do people deal with what is not on their radar screen? Often the producers and consumers of knowledge feel frustrated. The path of establishing knowledge is not a systematic linear process. It is a multi-dimensional search through hierarchical relations to be developed with a variety of criteria. Purpose of identifiable and convincing breakthroughs is to develop viable new connections of the past to the present. Opposition comes as new ideas run into conflict with existing dogma, taboo, and theories. In such new encounters stages of ridicule, opposition, and self-evident truths.

Dissonances deal with the doubt and the non-paradigmatic. Practices and concept include: Death, wars, inquisition, scorn, derision, rejection, ignore, skepticism, smart-alec's, overlooked, ignored, innuendos. Such reactions are analogous to the disdain of doctors for their patients who outlived their prognosis. Excuses can be flimsy as in the comment of one

Professor Cremorini against peering through the telescope of Galileo: .. *and besides, looking through those spectacles gives me headache.* Einstein is said to have greeted quantum mechanics with the comment *God does not play dice.*

Resonance change attitudes. Reward may be just knowing that you survived or prevailed, or more worldly and heavenly rewards. Resonance lies in seeing ideas in action (raising questions, identify issues, acknowledging gaps, predicting what and where to look for). Compelling evidence precedes grudging acceptance of the *apparently impossible* as the *expected* or *obvious.* At some point or other the apparently impossible have included flying machines, continental drift, quantum mechanics, laser and maser, and the internet revolution. Along the same vein, peaceful means for conflict resolution and coexistence are gaining acceptance as the futility of the violent means is realized.

Vindication cones when enemies vanquish. An interesting outcome is in the comment of Lord Rutherford: *Science is Physics. And all else is stamp collecting.* Few years later for his work he was award the Nobel Prize for Chemistry.

Practice of science is chaotic. Natural sciences are operationally the shared knowledge base. Quasi-, pseudo- and omni-sciences have cult follower not unlike the just in case believers or the lottery players. Science is about the validity of method, object, concern, and the outcome. It does not even pretend to be profound although its findings have had profound consequences. Even without a clue of the possible reasons useful methods and reasoning is built for the search of the probable. The approach is hijacked if we search for reason without any clue from the particulars of reality.

With an emphasis on the proven theories and without an explicit appreciation of the real, what is taught in schools amounts to quasi-science. Contrast this to omni-science that relies only on the universals, where cart placed before the horse goes nowhere. Pseudo-sciences rely on ad hoc theories to account for everything without ascertaining their veracity (UFO, extrasensory perception). The end result of all such searches is outcomes with little continuity of thought.

We are often told that *this is what it is, that is what is meant to be,* and *that is all there is.* Such blinders relegate the alternatives to the "impossible." The position is justified with flimsy excuses. Ignorance appeals for the tradition or biases couched in the aesthetics.

Ponzi-schemes violate reality.

Wars are Ponzi-schemes. Schemes from the Wild West sell dreams. Consider the cost of such nonproductive enterprise where no value is created, yet the resources change hands. The skill lies in the ways one hides violation of the conservation principle in a zero-sum game. In spite of remarkable advances in literacy it is still difficult for most people to recognize that not all ideas are viable, nor can they be converted to the products of value. Very few of these turn out to be panacea touted by consumer economy.

Mechanisms to correct the course of shared knowledge lie in its demonstrated utility. Invariably it is not evident to the observers at the fringes. Such groups can hardly distinguish the reality of an airplane from the mere ideas of UFO, perpetual motion machine, and automobiles that run on water (Eisen, 1999). Principles, ideologies and dogma based on the mere wishes and not-open to the scrutiny can only drive the carts of pseudo-, quasi- and omni-sciences into ditches and dead-ends. From such perspective it is difficult to distinguish or grasp the significance of

what is not here and now. Common sense of here and now has survival value for the recognition of niches. It takes uncommon sense to realize its potential.

Even premature science does not include anything that violates or contradict the basic laws of conservation of matter, i.e. something (mass, energy, information) cannot be created from nothing. That rules out perpetual motion machine and omniscience. It takes an uncommon sense to grasp many other variations that contradict reality. For example, a real entity cannot exist at two places at the same time. As it stands now almost everything that stands beyond such limits imposed by reality can be considered possible. It also requires an uncommon sense to appreciate what lies in the realm of feasible. I guess that rules out the possibility of a union between science and religion as some are envisioning. I am not sure why religion needs science for its validation, unless there is some doubt and discord in its own ranks.

Knowledge is about the uncommon sense of managed expectations. Knowledge is democratic, and science is more so because it relies on trial and error through practice. It is not because each person is equally empowered but because the validation process gives a chance to all relevant arguments of particulars and universals. Such mechanisms sooner or later weed out the wrong and inconsistent. The contradictory rarely see the light of the day.

As unfair as it is for the individuals, in the end the cost of such dissonances for the premature is worth paying. In the credo of science there is an explicit appreciation of such validation process. It is all the more of a necessity if as the search is driven by the credit and profit motives. Dissonances also follow from

unreasonable expectations of the consumers of science and technology. Common sense may focus on thoughts, words, and potential of ideas, however uncommon sense is required to realize which of these are not counter to modes of reality. In retaining focus on reality, shared knowledge manages expectations through practice and consequence evaluation.

Need for knowing and validation

Acceptance is critical appreciation. Resonance and dissonances become apparent as we begin to see, notice and appreciate the significance of events and insights. As we examine implications, dissonance and resonance come into play in the concept space of disbelief, disagreement, skepticism, humiliation, derision, silence, and the various brands of trusts. Faith and belief discourage such open scrutiny. One learns from practice *where an instance of open-minded honesty and compassion is more important for the critical appreciation than an hour of logical argumentation* (Michael Soule). Of course, acceptance beyond the disciplinary and cultural boundaries takes demonstrated relevance to the local concerns and contexts.

Not only the actions alter the cause but the individual perceptions also change subject-object relations to evaluate advantages and weaknesses. From this vantage point, perceptions are everything in wars, marketing, arguments and discussions, setting priorities and making decisions. Sensory inputs are meaningful only with interpretation guided by a mix of inputs of mind that include prior experiences, wishes and desires. Sooner or later one recognizes that the outcome can be faulty and unreliable for a variety of reasons. Searches through perceived reality are not about establishing knowledge, but about finding a correspondence with the verified knowledge.

Knowledge is as much about the content as the ways of knowing. Successful outcome requires a healthy respect for the tension of feedback that comes from *show me how do you know before I make my mind.* This is how practice validates experiences while entertaining doubt and alternatives. Beliefs increase the threshold for the alternatives. The value of doubt is in finding relevant beliefs, and then in figuring out their relevance by minimizing uncertainties, removing identifiable doubt, and then addressing skeptical concerns that may be valid.

Science as a social contract. Knowledge builds on the idea that not all thoughts, and certainly not all word constructs, are created equal. There may be many ways to get there, but efficient search towards desired goal relies on the *monism* of the underlying reality. For such reasons all products of knowledge are intricately associated with the measurement problem in terms of defined and verifiable parts. Rigor of measurement facilitates communication. Demonstrable differences are for example part of organization and categorization, and also setting up suitable specifications and controls for analysis. Consensus emerges as the individual measures are correlated and modeled with suitable criteria for verification.

The ultimate utility of knowledge lies in its predictive power. As an end-run, as if to capture a broader basis for the phenomenological diversity (prior art), all searches give way to viable hypotheses of relations. Nothing succeeds like the accepted success as utility. Faraday observed: *As an experimentalist I feel bound to let experiment guide me into any train of thought which it may justify… believing also that it is in its nature far more suggestive of new trains of thought*.

Whether for insights or usable technologies, the knowledge enterprise would not exist without social acceptance of its products. The Social Commons provides the resources, support, and the testing ground. It looks forward to a vision of what it could be, and not just what it was or even what it is. Such multidimensional interactions go well beyond solving problems at hand. The vision of life recognizes that potential of sustainable existence is possible only through a web of interdependent thoughts.

Images of the potential are rooted in perceptions. Ansel Adams saw *photographs as analytical interpretation of things as they are.* It has resonance with the analytical school of thought that had its hay-days in the 1920s. To most viewers images are for contemplation. Consider the photographs of babies. Without being there, images provide significance, immediacy, and objective relationships for developing subjective perceptions of what it could be.

Interactions with images, motifs and metaphors, provoke opinions and rationalizations. The feedback searches for credibility and veracity. In this search, it does not matter whether or not the images are balanced as long as they offer a tangible representation. Once the imagination takes over, the door opens for wide ranging interactions of varying extents and intensities. Individual threshold sets the course for insights into shared reality that can deal with conflicts and desires. Even without a total grasp of the content, our interpretations of motifs and metaphors assume a conceptual continuity of the content. Is it intuitive? Possibly yes, at least relative to a subjective and empirical frame of reference.

Need to look at the parts. A boundless whole is indistinguishable from *nothing*. Just as we can more readily recognize a change, representations also build on significant parts. Such discreteness facilitates analysis and contemplation, and provides usable modules. For the summation of the sensory inputs we also move though organization, classification, and taxonomy of parts. Depending on the means at their disposal the process of to-and-from parts is used by thinkers, savants, inventors, discoverers, explorers, navigators, inventors, marketers, regulators, merchants, and discerning consumers. We also look into parts with the assumption that identifiable doubt may be due to a defective part. We all benefit from tools of trade.

Analytical methods. The modern analytical methods to aid the sensory inputs (telescope, microscope) developed only in the last few hundred years. Yet ascent of man relies on the understanding of the behaviors of parts and modules. Such an understanding can be integrated into discernible more complex modules of hierarchy as brick-walls, machines, and computers. Analysis comes into play with the realization that objects and behaviors follow from a defined order and hierarchy of the component parts. Such a realization has set in motion a race for one-dimensional reductionism. It becomes dangerous if the dimension of reality, as for the human behaviors, is operationally reduced to only aggression, or only economic behaviors, or only to survival instincts. Rarely do parts add up to a functional whole.

Measures of the world. Having opinions based on impressions is not naïve. In the market place of ideas and thoughts reality follows from practice. Believing that you can convince others is another matter. Such actions depend on reliable measures of reliability. It is real if you can discern it, measure it, take count of

it. We begin to take a measure as we represent an object. We grasp it as we describe it. We are curious as we explore to remove chaff of wishful. This way we contemplate the objective and subjective. As a measure of transition from the subjective to objective reality, consider how much time elapsed since humans were first intrigued by birds-in-flight until the birth of modern aviation. By such criteria omniscience or God is neither a subjective nor an objective representation. One would reach the same conclusion if one tried to represent nothing.

Liabilities are part of usable knowledge. Knowledge is not just finding or being given. Nor is it a matter of accepting something with convictions of mindless blinders. What is handed down is often as good as the people who handed it down. What is handed down is often a means of control and empowerment. It is a promise with attached strings. Such motifs are not viable.

Acquired wisdom is neither acquired nor wisdom. In order to adopt what one gets for ones own purposes it is necessary to look into not only the content, but to explore the premise of methods, criteria, liabilities in the handed-down knowledge. Often it helps if we understand the motives and purpose of all those involved in the transfer.

Individual search provides meaning to life. There is tendency to remain faithful to what one understands. It is a matter of mind to find and invent meaning through multidimensional searches. Valid searches are made with the realization that it does not encompass the whole. Yet, the wisdom lies in picking parts that are relevant for actions and the moment. So-called horizontal searches organize and categorize inputs and inferences for

descriptions of complexity and regularity. Traditional approaches of natural history and philosophy are of this kind.

Orthogonal to the analytical focus on parts is the desire to reconstruct and experience the whole. As a way to explore, analytical deconstructions provide tangible pieces to reconstruct alternate worlds. Such searches provide bases for identifying viable connections. Reconstruction helps in identifying nodes that are not necessarily linear measures of the reality intrinsic in the parts. Reconstructions tempt us to envision, if not grasp, that proverbial universal. Here again wisdom lies in relating parts to the hierarchy while realizing the limitations.

Clearly, outcomes orthogonal methods of searches are complementary, and certainly not mutually exclusive. The process moves through trials and errors with no guarantees.

Dimensions of time in search of reality. Past is justified if it has utility for the future. For such purposes knowledge is not accumulated information. To chart the future, for example we need broad frames in which to generate validation criteria by inviting comparisons and identifying the trends. Putting it together calls for avoiding situations where *all parties talk, but not talk to each other*. All individual searches through valid representations stay in touch with reality. Yet the various outcomes can not necessarily be treated as transitions, or relativistic, or proven absolutes. Clearly, such intellectual honesty is critical for testing and ascertaining veracity.

Veracity of knowledge. Impressions and personal knowledge are passive acts. Only active searches provide meaning if behaviors follow in the context of social, cultural, historical and geographical experiences. Consider the role of ignorance, aggression, want, and survival instincts in shaping ideas about tolerance, plurality,

social contract, wars, technology and sustainability. Certain common threads from the human history are:

- There is always a lag between conception and implementation.
- Relations evolve and are then adopted slowly.
- Layers of knowledge grow invariably as overlapping changes.
- Such processes are open-ended.
- Changes resolve innate human concerns.
- Successful solutions (technologies) do not stay the same.
- Significant changes are essentially unidirectional.

How do we know? Search matrices are useful to evaluate outcomes on the basis of the criteria applied to observable categories. Through analyses we try to peel the rest from a constant of the intrinsic quality. Through more elegant models, motifs, and metaphors we aspire to peer into the potential. Devices of shared disciplinary matrix and theory make data appear intelligible. Particulars are the matters of fact and world-readings that we wish to engage in building the relations. Relationship between inputs, methods, tools and outcome has to be sufficiently clear to assign a causal relationship.

Individual perceptions are about transferring the information from probabilistic to the deterministic domain. Individual perceptions influence the world-readings of the facts, their interpretations, and usability. Therefore, validation is a shared process. It is a trial and error approach that requires plurality of inputs. Resulting generalizations are the relations of ideas that are useful for the future. At the same time they help one identify anomaly that may call for the modification of the disciplinary matrix with additional observations and criteria. This may change prevalent perceptions to bring forth the more enduring world-views.

Ways of knowing. Broader participation and a wider range of inputs is desirable for any search. The scientific, industrial, and information is based on use of tools that facilitated wider participation. For the developments from the past consider the roles of explorers, field stations, navigators, hospitals, laboratories, observatories, museums, marketing, regulations, standardizations, integrations, merchants, and consumer acceptance (Pickstone, 2001). Each created independent measures of the observed reality in relation to the consumer of the knowledge. Educators perpetuate the knowledge. Crafts make it relevant in the local context. The media integrates the development into the culture. Critical interactions and feedback is promoted by peace and prosperity. War and beliefs have their own way of influencing g such contributions.

Threats to knowledge. The biggest threat to knowledge is secrecy and omniscience. Wars hijack and corrupt if not disrupt the process. Such disruptive forces often disfranchise and alienate many from participation. A polarization of dialectic hinders free inquiry. Subtleties that hold complex systems in working order are lost if open inquiry is considered inadmissible. Denial takes an upper hand if accountability is sacrificed. The long tradition of collusion between the state and dogma still has a grip on the minds of many of the world leaders with messianic or Platonic visions. Life is too short to dwell on such foolhardiness.

Prematurity. Decision to act on the basis of incomplete knowledge is integral to any real time decision making as for the business decision, speculations, growth and development. Timing may not be everything, but it is undeniable that in most spheres of life timing the actions can be critical if not a matter of life and death.

The cost from misplaced and premature decisions implemented in the public Commons of the knowledge can be

astronomical. Consider the conception of omniscience that has terrorized and marauded humans for the last five or more millennia. It continues to terrorize people psychologically and intellectually, if not physically. In most parts of the world, we have learnt to minimize the impacts of such certitudes. Yet most do not dare to challenge it validity. Is it the faith or the fear? How do we arrive at certitudes in the absence of valid evidence? *Perpetual I don't know* may be a prudent course if the risks are high. Prematurity also has associated risks and rewards just as sneakiness, deviousness, prudence, and risk-taking. The unsuccessful are wiped out.

On sale to steal the moment. How often do you get a feeling that what you are told is because somebody feels that they are supposed to tell you? News hour is to be filled whether there anything of significance to report. How much of what politicians' say, even when not under duress, has to be discounted because it is inconsistent with what they said moments before? Savory and unsavory mixtures of facts and fiction in the private and public discourses are the devices to steal the moment. Often the hope behind such tactics is that the victims will not notice it, or forget about it, or that can it be somehow denied when the time comes. Look for the fine print of the buyer be beware.

Who own ideas? Innovations build on the past. Progress is about better ways of knowing to control the outcome. A useful measure of history comes not from the individuals at the helm, but from an account of the better ways of knowing and doing thing by ordinary people. What used to be a free flow of ideas to generate more ideas in the public commons is now threatened with the intellectual property rights. To an extent it facilitates flow of certain products. However premature claims also threaten other viable alternatives.

The very concept of the claim of ownership of intellectual property ignores how ideas are created. The device is for the convenience of paddling the products in a controlled market. What is wrong with that? To put it simply: the practice encourages only certain kinds of ideas at the expense of many others. MacWorlds feed only on the frenzy of their own success while sapping the resources and nourishment for many other products. Such practices fundamentally change the identity and focus of the pluralistic creative processes. Recall that machines were supposed to liberate human from drudgery until most human became slave to gizmos. As for innovation, it often means packaging the commodity in certain usable forms – like the bottled water that is invariably the filtered tap water sold at 1000 times the cost. According to the Bottled Water Association, *The bottled water is no more unsafe than the tap water.*

The Commons. There are encouraging trends in the intellectual property sold to consumers. The song-and-dance that was monopolized is beginning to succumb to the innovations on the internet commons. It has also encouraged other forms of works of creative expression which do not adhere to the normal of intellectual property.

Even in the past ideas of ownership and profit motivated innovations have been blatantly unsuccessful in dealing with general education, public and social services, transportation networks, public lands, natural resources, knowledge base, libraries, technologies and certainly the enterprises of sciences, arts and literature. Such institutions are resources for affordable services on the basis of need rather than the ability to pay. More value is being created in such environments. Such contributions in an open environment come from diverse sources as well as the users.

There are down sides. Vision of universal education through radio and television has degenerated into a medium of mindless entertainment. Some will be surprised to hear that the single biggest paid use of internet in USA is for accessing the pornographic material through cyberspace. I am sure it is much large than the hit rate for the free OpenCourseWare from MIT for its course material.

Global commons. As part of the human heritage, the Commons of viable ideas and technologies unleash creativity by lowering the cost barriers and by freeing people from drudgery to pursue other interests. As certain ideas resonate with experiences of many to find a place in the Commons of knowledge, other more seminal works remain dormant for long time before they resonate. The difference is accentuated by the market place.

Serious concerns have risen: What is the cost to the Global Commons? Who is responsible for sustaining the commons? What is derived from the commons? Who own it? The lessons from the industrialization and exploitation of the natural resources are blatantly clear and unequivocal. Homogenization in the guise of globalization is also a hindrance to the interactions critical for the creative and innovative processes that rely on a free flow of ideas and information, as well as on the freedom to develop and try out ideas in the local context. There is a deep structural relation between survival and relationship of an organism with its niche environment.

An insidious contradiction of the intellectual property is that it restricts access to those who provide resources and meaningful feedback. Public commons is the ecosystem of information, knowledge, ideas and learning that rely on free flow and exchange. The feedback is integral part of the discovery, creativity and implementation. All of these thrive on unregulated

spontaneous interactions and sharing tangible information. Nor does its value erode with use. In fact, sometimes the value and information-content increases as its relevance is better defined. One does not loose information by sharing, as might be the case with a commodity or even a tool.

Against Gods and Humbug