KNOWLEDGE, PROCESS, WISDOM

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Knowledge and wisdom are generally associated with the mind, of our relationship with the universe, though we often talk of body wisdom, the apparent ability of our body to know and respond to situations without any conscious mental process. But, then, the body does act as a transducer unconsciously processing external signals and executing volitional actions. In the investigation of the higher functions of the mind we can devote our attention to the mind by itself. In the Indian tradition of this study one talks of manas, buddhi, ahamkara, and citta for various levels; but in this discussion we have to be content with distinguishing different modalities of the mind.

Theory Formation and Self-indoctrination

As we grow up we learn facts and interconnections between facts. Experience is located in webs of interconnected facts. Gradually patterns are recognized. We acquire language and logic; and convert our wealth of experience into knowledge codified in logical-verbal systems. Like converting worldly goods (food or precious metals) into paper assets; this makes it possible for a person to acquire considerably more knowledge. Like the people of old who got together to build a tower reaching to the very heavens we too build our language-logic system of knowledge to the highest levels of experience.

All towers need a framework be it made of steel grids or wooden scaffolding. So too the tower that we build: we need a process of theory formation and indoctrination. They guide what experiences are fitted in as facts into our tower. So what we call objective knowledge is a structured way of relating to the world and contains in it the patterns and more of our times and our culture, our heritage and our values. The selection and allocation of experience cut up into facts is thus theory-driven.
Part of this building up of the constellation of facts, of the growth of knowledge is the recognition of similarities between the substructures of experience. There seem to be "repetition with variation" in our experience. Agatha Christie's Miss Marple finds parallels in St. Mary Mead village life which help her solve the most clever murder mysteries; for others it may sound farfetched but for Miss Marple the similarities are insights into human nature.

The Tower of Babel

The modification and ornamentation of patterns already recognized in past experiences and applicable to newer situations allows knowledge to grow exponentially. This ability to transfer one structure to a different domain is a new method of adding to our knowledge. In this sense knowledge generates even more knowledge; and the tree of knowledge grows without limit.

The people who built the tower in Babel had eventually to abandon their task since their language got jumbled up. They were scattered far and wide with varying tongues. Rather than see it as a disaster we could look upon it as the beginning of true culture and creativity. One had to go beyond "being of one mind, having one tongue" to a rich multiplicity of languages and points of view. The creative impulses of the mind are god-like and not willing to let the language-logic tower of knowledge to complete itself. Nonverbal and intuitive processes begin to operate.

One striking example of this growth is in the work of the astronomer Olbers who found from the observation that the night sky is dark (and not as bright everywhere as the stars) the deduction that the universe could not have existed for all time if space is infinite and uniform in the large. His argument is as follows: if the density of stars is uniform a spherical shell of small thickness would contain a number of stars which increases as the square of the radius; but since light intensity decreases as the square of the distance, the illumination at any point due to these stars in the shell is proportional to the thickness of the shell. If space is infinite the intensity is also infinite. A more careful calculation would show that it would be only as bright as the stars. We need infinite time so that the light from distant stars could reach the point. Equally well we could think of the space containing the stars to have existed "forever" and hence be in thermodynamic equilibrium. Then the intensity everywhere inside this "blackbody"
would be the same.] So since the night sky is dark with shiny stars it follows that uniform density of stars with infinite space and time is not tenable. All this from looking up at the sky! Shades of Sherlock Holmes.

Metaphors and Culture Filters

As the mental processing becomes sophisticated the growth of the knowledge makes great use of metaphors. Metaphors describe the "deep structure" of experience; and when one metaphor is unable to make the correspondence one makes a sequence of metaphors converging to the correlate of the experience much as an irrational number is the convergent limit of a sequence of rational numbers. For example the relaxed alertness of Dakshinamurti is thus described:

The sky unsullied by rainclouds
The seascape unruffled by waves
The flame unswayed by wind

Thus did Dakshinamurti keep his stillness.

In this sequence we move from the largest scale to the smallest, from the distant to the nearer to evoke the intimate subtle nature of relaxed alertness.

In the beginning of metaphor construction we rely on collections of sense data and they are concrete. But as we grow in knowledge and the processing of the knowledge proceeds the metaphors for the more fundamental experiences become more abstract and esoteric, through in reality simpler. We may also make use of our own self-awareness where content and process coexist; and in this case we may make use of noncommutative models. This is not surprising since after all process changes content. When we see ourselves getting angry our anger has a different texture. Some of these noncommutative models are difficult to describe in words, yet they are communicable.

Illuminating new situations in the light of the old, of being able to put oneself in a different place, time or cultural milieu are all seen by us as social skills and as a sign of maturity. We are never really free of the culture-filter through which we perceive and process; and in this sense we are never free, never fully mature. Often the ability to transcend the culture-filter to whatever degree, maturity is associated with the onset of wisdom. Often this is a matter of the passage of time, of becoming a senior citizen. This may be, but we could also view this as the progress of a nonverbal super-
computation: insight into experience is often, but not necessarily associated with the passage of time. There is the story of the young child looking up at his father and saying "Daddy you don't know anything". In turn the teenager becomes a young father and tells his son "son, my Daddy knew everything".

Often our analytic and problem solving ability stem from our ability to comprehend abstract (deep) structures so that we can translate patterns from one domain to another domain of experience. This translation may be verbal or nonverbal ("visceral").

*Beginning of Wisdom: Witnessing Awareness*

We see another aspect of this in the function of discrimination. We usually mean by this the ability to consider alternate perspectives, alternate processing in parallel. It is as if we are moving around in space taking different perspectives. The advocates present to the best of their ability two sides of a case: it is the function of the judge to see both sides of the case and make a decision. Many of the real advances consist of setting the problem upside down and re-viewing it. An example is Dirac's theory of the positron. He said there are electrons of negative energy filling all of space (the "Dirac Sea") which is vacuum ("nothing"). Positrons are the "holes in nothing", a bubble in the Dirac Sea. In a pond pebbles sink but bubbles rise. Pebbles and bubbles go opposite ways. So also electrons and positrons in electric fields. To go from the pond to the electrodynamic vacuum, to see "holes in nothing" is the ability to change one's perspective.

The ability to witness the entire mental process dispassionately and yet accurately is Wisdom. New methods and structures are now possible since even the mental processes are parts of one's experience. One is mindful of the mind and its activities.

As an example let us appreciate the theory of gravitation. It was remarkable to unite many different phenomena like the tides in the ocean, the motion of the moon around the earth and the earth and other planets around the sun and the falling apple in terms of one force. How much more remarkable it is to see that since the accelerations of all bodies is the same in a gravitational field, the field could be thought of as due to the curvature of space-time! Space-time which was previously a featureless arena now becomes part of the dynamics.

Subtle causes and subtle correlations get noticed when one has achieved the ability to change perspectives with skill. New mechanisms be-
come possible and new possibilities arise. When we learn Euclid's geometry we are struck by its beauty; we think we know what points and lines are; and we are amazed that collections of points and lines have such intricate relationships. But then comes Desargues who tells us that we could replace lines by points and vice versa, concurrency by collinearity and vice versa, locus by envelope and vice versa; lo, and behold all the theorems of Euclid's geometry still hold. So we don't necessarily mean points when we say points! But a subtler connection obtains: the principle of duality. We move to the level of an axiomatic system with automorphisms.

Sometimes the changes so brought about remake our entire understanding. If we had a picture in which light was either a particle or a wave we could see if light travelled faster in air than in water; then it was consistent with the wave picture of light; but if it were the other way it was consistent with the point particle picture of light. Direct experiments show that light travels faster in air than in water. So point particles are out. Photoelectric effect was easier to understand with particles of light ("photons") while interference and diffraction are easier to understand with waves of light. Though point particles are excluded, extended particles are acceptable. But interference and diffraction need waves. So we need something that can be both waves and particles. This was ultimately realized by the quantum theory of light. The pictures that we started with were unnecessarily restrictive: we have to recognize a new physical model. If one item of knowledge does not fit, like Hercule Poirot we must exclaim "I have been an imbecile. I must put the little grey cells to work. I must start all over again..."

Wisdom as a Process: Myths of Psyche and Naciketas

Wisdom is thus the ultimate process. In this process the starting theoretical framework itself may be swept away, or seen to be only one way of starting out. Inquiry into fundamental problems almost inevitably lead to cataclysmic change in our world view.

There are several myths which illustrate the onset of wisdom. The story of Amor and Psyche is one such. A king had three daughters, two run-of-the-mill princesses who make normal marriages and settle down; while the third, Psyche is so beautiful and of such a personality that the people consider her as the "new Aphrodite". She is worshipped but not courted; and she makes Aphrodite very angry by behaving as if she were a goddess. Her fa-
ther the king, goes to an oracle; Aphrodite manages to get the oracle to pronounce that Psyche is to be married to Death. She is to be taken to the top of a mountain, chained to a rock so that she may be ravished by Death. It is both a punishment and an object lesson. Aphrodite asks her son Amor, the god of love, to use his enchanted arrows to wound her so that she would embrace Death. To be unusual, out of the ordinary and admired is to anger the reigning gods!

But Amor wounds himself by accident on an arrow and falls in love with Psyche and gets her carried off to an enchanted place and makes her his bride. He tells her never to look at him nor to ask him about his ways. But Psyche has no objections and enjoys her life, with Amor being attentive to her every night.

This happy state is not like by her elder sisters ("the establishment") who plot to destroy her happiness. Psyche pleads with Amor to let them come and see her. They do come and become enraged that she is so happy. They tell her that her husband is a loathsome serpent and plans to devour her and her unborn child; that she should conceal a lamp in her bedroom and use it to see him as he is. The naive Psyche carries out this but finds that her husband is the most beautiful god and really falls in love with him. But since Psyche has violated the covenant he flies off.

These events reduce Psyche to total collapse but she has the good sense, on the advice of Pan, to go to Aphrodite (the "real establishment"). Aphrodite tells Psyche that she is nothing and nobody and would be only good for menial tasks. What a fate for a goddess-like princess! Aphrodite sets her four impossible tasks: to sort out a mound of mixed seeds by nightfall, to get some golden fleece, to fill a crystal goblet with water from the Styx; and to get from Persephone in the nether world a jar of her personal perfume. With help from various unlikely agents, but really from Amor, she manages to do all this but curiosity overcomes her and she opens the jar of Persephone's perfume and is engulfed by a sleep of death. So what she was condemned to undergo by the oracle is brought about by her own curiosity. But at this point Amor comes to her rescue directly, takes her to Mount Olympus and gets Zeus to make her a goddess in fact.

For many of us the cruel ordeals of Psyche, the unusual, is familiar. Curiosity, grace and elegance angers the establishment and a fate worse than death threatens. But good fortune comes one's way; and as long as you do not raise too many questions you are happy. But that does not satisfy the elders, the older order. The radical questioner finds the paradise taken away. One must then go to the real establishment and be asked to do im-
possible tasks. One must apply one's energies to ordinary menial tasks, "to go to hell", learning the ability of the ant to sort things out and of the eagle to see and dip in the river without slipping on the slimy banks; to learn from water reeds how to get the golden fleece without encountering the fierce rams; and how to avoid getting entangled in other people's designs and to appease the hound at the gate. Wisdom is the process of applying knowledge with skill and the ability to manage "missions impossible" with appropriate aids from nature. The ultimate process contains all this but grace too: Psyche's elevation to godhood is not by her conscious deed.

The theme of the aspirant to wisdom encountering Death appears in the ancient myth of Naciketas, who was punished by his father for being too curious by offering him to Yama (the god of death). Naciketas goes to the nether regions and is kept waiting at the gate for three days. When Yama grants him an audience he offers three boons to Naciketas. For the third boon Naciketas asks Yama "What happens to a person who dies" Some say he remains, others say he is no more. Please tell me which of these is the correct view. Yama tries to dissuade Naciketas from this line of inquiry and offers in exchange many attractive gifts. Naciketas turns down all of them and humbly requests a response. Yama then goes on to elucidate the nature of preyas (hedonistic life) and sreyas (enlightened life) and tells Naciketas that his preference for the path of wisdom over even exalted states of wealth and attainments shows that Naciketas is on the path of sreyas.

In the further elucidation he talks of two levels of awareness in a human: one participating in all action and the other witnessing all actions including his own. He then goes on to extoll that level of wisdom when all processes are perceived and action is without anxiety or attachment but in unalloyed joy and with precision. In this level of wisdom one is "beyond death" and the original question is completely eliminated. Naciketas returns to his father to everyone's joy.

*Wisdom, Death and Integration*

Encounter with death, to die to the known is a necessary part of the process of acquiring wisdom. Once in wisdom the traditional life patterns are not necessarily discarded but life takes on a new ambience.
The process of wisdom is the cycle of creation, exploration, experience, abandoning of older models and modalities, insight and integration.

The sequence of processes involved in the construction of quantum field theory and quantum cosmology is illustrative: while ordinary quantum mechanics deals with the behavior of well-defined systems we need to consider the process of creation and destruction operators. But when this level of theory is better understood the new system, the quantized field, is a higher level structure in which the various previous systems are levels. Creation and destruction are mere changes of state; and the underlying theory is a richer but proper quantum theory with conservation of probability.

In the same vein space and time which are the background against which dynamical processes take place do themselves become dynamical variables at a deeper level. At this level questions like the evolution of the universe or the observed dimensionality of space or the chemical composition of the matter in the universe become computable. Cosmology becomes an aspect of quantum dynamics. The old world is dead, yet reappears in a more integrated form.

We do have awareness in sleeping and dreaming states which differ from the awareness in waking state. Closer analysis reveals further shades in the waking awareness. Wisdom is that which is the same in all states, the integration of all shades of awareness, all states of awareness. All models are integrated in wisdom.

Wisdom is creativity masquerading as compassion which is both illuminating and illuminated, communicable but beyond mere words. Most of all, wisdom is not the accumulation of untold items of knowledge but the process by which knowledge functions to illuminate and discover. A person who knows a language well does not carry in his mind all the words and rules of grammar and syntax but generates what is appropriate when needed. Wisdom too is creative: it generates and supplies the knowledge and the means to uncover new knowledge.

No wonder that the metaphor of ruho (spirit or breeze) is used for wisdom.