

**THE CORNER TREASURY OF ARCANE AND NEGLECTED PHILOSOPHICAL GEMS
(OF MY OWN MAKING)**

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Gem #8: THE TRAGEDY OF HUMAN CONSCIOUSNES
AN UNDERLYING CYCLICITY IN HUMAN, ESPECIALLY WESTERN CULTURAL EVOLUTION?

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Who do we think We are?

A remarkable thing appears to have happened a few thousand years ago: cultural expression was given to the emergent phenomenon of self-consciousness. Although chimpanzees (but not monkeys) are able to recognize their own image in a mirror, their behavior in the wild fails to unequivocally betray that awareness. This might seem a somewhat strange thing to say in view of their obviously high intelligence and complex social interactions, but even such impressive behavioral capabilities may not necessarily require a well-developed sense of 'self', as distinct from the 'other(s)'. Prehistoric humans, in contrast, at some point reached a degree of self-preoccupation which can leave no reasonable doubt about their having passed this psychological watershed. What to say, for instance, about burial rites which unmistakably express a belief in the existence of a 'soul', or *anima*, which not only operates during life as the proverbial "ghost in the machine" but survives (and wishes to be well provided for!) even after physical death. Furthermore, the great care which often went into preserving the corpse, and then surrounding it with all sorts of very down to earth implements, leaves little doubt that this animistic concept of an immaterial Self was, first and foremost, an internalized image of the very body in which the hypothetical spirit was believed to be residing.

We can also deduce that this newly evolved perception of existing as a distinct entity, operating within a vast environmental 'space', must have been - and still is - a really terrifying experience. How else can we explain the prevalence of emotionally charged 'vacuum' behavior (the ethologists' word for fixed-action patterns which occur in the absence of the stimuli which normally release them) in most religious rituals? Such behaviors - feeding, fighting, fleeing, etc. - are normally seen only in animals subjected to highly stressful situations, presumably of such intensity that a 'hallucinatory' representation of the appropriate releasing stimulus is triggered within the brain. Intriguingly, instinctive behavior patterns *in vacuo* - including fright - have been described also during REM sleep, following brainstem micro-lesions which allow the sleeping animal to uninhibitedly act out its dream-like 'oneiric' experiences.

Separation anxiety is a highly potent stressor for maternally deprived infants even of species in which mirror-image recognition tests fail to reveal clearcut signs of self-awareness. The phylogenetic emergence of such awareness, concomitant with the selective enlargement of the neocortex during primate evolution, apparently caused the persistence into adulthood of this instinctive response to parental abandonment. We human beings, laboring under the evident strain of self-consciousness, thus express our

existential anxiety through ritualized appeasement gestures similar to those universal appeals, prostrations, blandishments and promises which come so naturally to most of us whenever the need arises to manipulate an individual of superior 'rank'. The only obvious difference is that, within a sacred context, the plea for help or mercy is directed towards one of those invisible alpha-males (or females) in the sky.

A paradoxical aspect of the exaggerated fearfulness which, I have suggested, emerged along with the phenomenon of self-consciousness is the characteristically human preoccupation with immortality. No longer having faith that suffering will end even with death, mollification of the Almighty comes to entail a preparation for eternity which far transcends the social need for religiously inspired 'good' behavior. Unquestioning obedience, never abating praise, and soul searching credulity - all of these to be demonstrated via scrupulously proscribed rituals of self-abasement - such are the coins which must ensure, if not to be granted eternal bliss, at least to be spared eternal torture. Much of the economic resources of a society such as Egypt under the pharaohs, or China with its mandarins, went (restricted, as usual, to the top dogs in the human zoo) into getting ready for the frightful journey of the dead. Medieval Europe had its imposing cathedrals and other sacred artistic masterpieces to serve the ideal of spiritual salvation after physical death in a less exclusive (if hardly less expensive!) fashion.

In our own times, misguided millionaires have been known to have had their deep-frozen 'remains' put into what they asininely believe to be suspended animation, awaiting the development of techniques which one day will enable them to live happily ever after. The most in(s)ane reflection of this profound alienation from nature is a proposal which I recently came across, to the effect that psychological immortality could be attained if all of the neurophysiological information which defines some body's 'personality' were to be programmed into superchips, and then implanted into a robot constructed from imperishable plastics, ceramics and other high-tech materials. The author of this (not altogether harmless) nonsense gave absolutely no sign of realizing that, even in the event of successfully clearing the purely biological hurdles, all that his robot would be was a *clone*, not a perpetuation, of the psychological entity which had aspired to immortality. Perhaps more attention to logic and philosophy during the preparation for a career in science would help to short-circuit this sort of misguided attempt to weld the animistic superstitions of yesteryear onto a crude caricature of contemporary 'physical' notions of reality!

Somewhere between one and two years of age, human infants typically acquire the ability to perceive that, in some sense, their reflection in a mirror 'belongs' to themselves. Not long afterwards, the acceptance of their name as an appropriate

designation for 'me', and the linguistic use of first person singular pronouns, betray the unmistakably close identification of the growing child with its body image. No longer feeling itself as extending any further into space than the surface defined by its skin, nor as yet feeling confined inside those limits, the infant thus experiences itself in pretty much the same fashion as does any outside observer of his behavior. How does this change in the self-referential perspective come about?

Visceral and muscular sensations in themselves must be, as far as the central nervous system is concerned, just two more classes of afferent information which it must gradually learn to appreciate and deal with. The living body, however, is provided with powerful mechanisms for protecting its present and future physical integrity, whereby potentially noxious stimuli usually set off a conditioning procedure leading to the active avoidance of such stimuli in subsequent encounters. It would, of course, make excellent biological sense for this reinforcement mechanism (along with reinforcement in the opposite direction) to participate in the higher-order brain processes too, as a means of bringing about more effective control over, as well as integration with, other ongoing operations. This would be the physiological level at which we experience sensory stimulationn subjectively, either as pain or as pleasure. It is thus the *affective* dimension to bodily sensation which - how could it be otherwise? - must teach us, in time, where in perceived space the 'I' stops and 'the rest' of the world starts.

The phenomenon of 'volition' demonstrates that ego-formation does not stop at the body's borders, but progresses to the point that our experience often becomes less one of *being* a body than of *having* one. We thus find ourselves needing to employ 'willpower' in order to goad this often unwilling vehicle into performing the desired actions, as well as to restrain its impulsive tendencies towards embarrassing, dangerous or otherwise undesirable activities. We may surmise that this later phase of self-consciousness develops as a result of strong socialization pressures upon the child, in the course of which its primitive learning mechanisms become supplemented by the ability to handle symbolic (especially verbal) information - Pavlov's 'second signalling' system. Once thus equipped with a 'will of its own', the maturing mind finds itself capable of speeding up the learning process and, thereby, of greatly reducing the anxiety associated with anticipated punishment. The price, however, appears to be the creation of a 'schizoid' condition in which a permanently smouldering conflict exists between an 'ego' and an 'id' (the very name gives it away!) portion of one and the same Self.

It has often been pointed out that the fact that the incidence of schizophrenia is surprisingly similar in a wide variety of cultures, and across all social strata, is strong evidence for hereditary 'determination' of this disease. What is less widely appreciated,

however, is that what a set of genes is capable of determining is never the end-product itself, or phenotype, but only a set of pre-programmed developmental responses (protein synthesis!) to a specific sequence of 'epigenetic' contingencies. Looked at from this vantage point we arrive at the conclusion that, in addition to cross-cultural *genetic* similarities in the susceptibility to mental illness, *environmental* invariants may also exist which are crucial to the etiology of behavioral aberrations such as schizophrenia. Self-reinforcing pressures upon the 'ego' to live up to socially acceptable standards of performance, with the unrelenting threat of severe reprisals always hanging over its head, may be considered as a prime candidate for such a universal 'schizogenic' factor.

The brain and its Self

It is little more than a tautology to state that a living organism's experience of 'suffering', in any *subjective* sense of the word, requires the existence of some sort of consciousness. Otherwise, pain would be simply a mode of sensory stimulation which elicits a protective response mediated by the central nervous system. Biology has succeeded in making a modicum of sense out of the perennial conundrum regarding the possibility of there being some 'meaning' to life - a question which, in all likelihood, can be translated to mean simply "why must (I) suffer?" If the name of the evolutionary game is nothing less than managing to stay alive and healthy long enough to reproduce, and to rear (if necessary) the young until their own sexual maturity, the 'purpose' of most behavioral activities is comprehensible enough. Even the heart rending tortures, to which 'losers' in the lifelong struggle against physical disintegration tend to be subjected, is no longer puzzling when we reflect that there simply are no possibilities, within the framework of a theory of natural selection, for mechanisms to have evolved solely in order to place a ceiling upon individual agony.

The situation appears somewhat less tragic, however, when we realize that true suffering requires more than just consciousness: there also must be some sense of a 'self' which is the *subject* of its conscious experience. Organisms lacking this kind of complex, higher-order, sensory feedback somewhere within their nervous system would thus be spared any subjective awareness of whatever it was they were going through. Indeed, the entire animal kingdom (with the exception of us higher primates) may hereby have been let off the existential 'hook'. The real mystery of creation, then, would boil down to: "Why, for God's sake, was we of all species picked to eat from the Tree of Knowledge?" a story which can, with little stretch of the imagination, be regarded as a subtle metaphor for the phylogeny of neurophysiological mechanisms - evidently sexually dimorphic! - subserving the phenomenon of self-consciousness.

But how can this phenomenon be *seriously* explained? one of the most ancient of philosophical brain teasers, and to this day without so much as a hint of the direction in which a satisfactory answer is to be found. Either consciousness is a primeval aspect of nature, like the four (or is it three nowadays?) fundamental forces - in which case we are confronted with the impossibility of imagining what "mind" in an atom, a macromolecule, or even a whole nerve cell could possibly refer to - or it is an emergent property of matter (necessarily living?!) at some critical stage of organizational complexity. In the latter case we are obliged either to deduce its inevitability from first principles, or else to make sense of the seeming arbitrariness of its evolutionary origin. In any event, even card-carrying philosophers frequently fail to realize that the very phenomenology of subjective experience does not lend itself to a dualistic interpretation of how the human brain works. For instance, all of the mental representations of ongoing stimuli which form the basis for our conscious perception of an 'outside' world can, by introspection, be seen to consist simply of a flow of information involving a small number of qualitatively distinct sensory modalities. There is no theoretical advantage whatsoever to be gained, no burning issue to be resolved, by ascribing a non-physical existence to *those* fleeting 'images'.

No.... the sole 'region' within the entire field of consciousness which tempts us to take seriously the idea of a spiritual presence inhabiting the body (closely linked with, but not identical to, the matter making up the brain) is that part which we experience as being subjected to desire, to 'affect' and to will - the Self. But if all the rest of our conscious awareness reflects on-line integration and cross-correlation operations being carried out within sensory information channels, a far simpler interpretation of Freud's "Ego" or Descartes' (ergo!) "Sum" is that it too is not really a *thing* at all but, rather, the internal manifestation of a (presumably unique) pattern of neuronal activity. States of greatly reduced awareness such as deep sleep, moreover, are experienced subjectively in a quite different way from that which would be predicted by a dualistic model of consciousness. That is to say, any dualism worthy of the name implies that a feeling of 'being there' ought still to be present despite the complete suspension of sense impressions - analogous to waiting quietly (but awake) within a darkened theatre. In reality, however, the conscious Self - like the light - goes 'out'!

Introspective reports from a variety of sources suggest that self-conscious experience rests upon a combination of two crucial factors: *tension* and *attention*. The first of these would explain why mental and physical exercises, both traditional and modern, which are aimed at inducing a profound degree of relaxation and inner quietness can lead to a sensation of gradually expanding beyond the usual body limits. Conversely, you might wish to try concentrating your attention upon the Self itself, i.e., on the stream of verbal

and pictorial images which we call 'thoughts', and on the chronic visceral and muscular tensions which remind us of the immediacy of bodily limitations. This second type of exercise can lead to a psychological transformation into a 'detached' observer of those physical and mental activities with which the Ego normally identifies. Thus, the perceived 'I' will remain that which is *doing* the observing, while 'it' comes to embrace all of oneself which is in the process of *being* observed.

The possibility, mentioned earlier, that selective attention is a function of locally synchronized inhibitory synaptic activities within the cerebral cortex implies that electroencephalographic (EEG) recordings of sufficient resolution might succeed in revealing a 'limited access' zone from which the "searchlight of attention" normally tends to be excluded. The specific prediction is that brief episodes of delta wave attenuation will be observed to flit from one EEG lead to another, marking shifts in attentiveness over different parts of the field of conscious awareness. Furthermore, such episodes may be expected to 'gravitate' around this hypothetical neocortical area, the activity of which should be found to be relatively undisturbed by epochs of transient EEG desynchronization. Such a region - on one or both sides of the head, and within which interoceptive and proprioceptive representation will necessarily play a predominant role - would represent nothing less than the putative neural substrate for the experience of Self.

An unusually high intensity of fast EEG (beta) waves should also be encountered in the putative cortical zone of self-consciousness, reflecting the chronic tenseness of body and mind which is one of the probable prerequisites for an 'Ego mode' of experience. Further, under conditions where radical deviations from normal waking consciousness take place - either of a 'psychotic' or a 'mystical' nature - predictable alterations in electrophysiological activity ought, in principle, to be observed within the delineated area. As for ontogeny, delta waves during wakefulness decline in prominence over the entire scalp as children grow older, but the implications of these changes for the quality of subjective awareness are not yet known. Moreover, high-resolution studies of regional EEG differences pertinent to the question of selective attention are only now starting to become available.

Primitive animism or no, the perception of being trapped inside a physical body from which one can conceive of some day being 'liberated' is a psychological reality which most of us, I dare say, are in touch with daily. The fact that the degree of separation between 'I' and 'it' (or Buber's 'Thou') which constitutes normal conscious experience is, in fact, illusory when examined from a biological vantage point does not seem to weaken its grip upon the mind. Looked at in this light, the traditional religious preoccupation with

life after death takes on a quite different appearance - as an alternative to physics, nonsense to be sure, but as an approach to the psychological implications of our own mortality, quite possibly a pre-scientific insight of the greatest profundity. In Aldous Huxley's well-known book "Heaven and Hell", mescaline-induced sensations of 'eternity' are vividly described which bear an uncanny resemblance to descriptions in the Tibetan "Book of the Dead". These, in turn, are purported to have been dictated by dying monks who were describing the experience 'on-line'. A state of ego-dissolution, leading to an insight into the basic interconnectedness of all 'things', is experienced as being either ecstatic or undescribably horrible, according to whether one is able to go along with the impending sense of dissolution of the Self or whether, in a state of panic, one makes an ill-advised attempt to oppose it.

At the point that all sense of the passage of time disappears, so that (presumably as a result of short-term memory mechanisms dropping out) nothing is left but a perpetual NOW, eternity has become a *subjective* 'reality'! Since a heaven or hell, of sorts, may well be in store for us after all, it would make sense (as with any inevitable ordeal, whether an initiation rite or an important exam) to spend some time in preparation for it. When we also consider the lesser ego-threatening crises which loom up in the course of a lifetime - frustrated ambition, unbearable humiliation, the loss of job, status, health or loved ones - any time invested in crisis management would appear to be time well spent. As with most skills, probably the earlier one gets started the better, but our educational systems have precious little to offer at the moment. And as long as we must depend largely upon pre-scientific (or else very preliminary) notions of the nature of the human mind and what ails it, not a very great deal of improvement can reasonably be expected.

The tragic irony of psychosis is that the initial loosening of ego-boundaries may actually be an adaptive mode of mental activity, triggered whenever a problem arises which urgently needs to be solved. Instead of its usual efforts to find an answer in a stepwise ('logical') manner, the mind becomes inundated by a kaleidoscope of pertinent bits of information, tentative strategies and possible answers. This condition would represent a 'creative' mode of thought which, handled properly, may have made possible the extraordinary achievements of intellectual, artistic, military and other geniuses. It appears to be essential, however, to allow the flow of ideas to proceed without impediment, and this requires a degree of 'letting go' that most of us seem rather reluctant to risk. Confronted with danger, then, we must endure the misery of struggling desperately to impose our habitual linear approach to problem solving. An inspired solution having thus been thwarted, the only defense which remains - unless some semblance of rational thought can somehow be restored - lies in our inborn repertoire of defensive behaviors (pleas and threats, for example, depending upon whether it is fear

or rage which is the predominating emotion at that moment).

The commonly observed 'displacement' behavior of going about business (or pleasure) as usual, rather than facing the urgency of a new situation, can bring only temporary relief. As a last resort, a 'strategy' of total helplessness may then be adopted in the hope of eliciting a compassionate response from someone. Psychosomatic illness or hysterical paralysis fills the bill, but so does the assumption of a 'play' identity - as if the subject were again a child. This dramatic move indeed seems capable of earning a degree of dispensation, the distinction between crazies and criminals being one which goes far back into antiquity. Different individuals succumb instead (under stress) to the incapacitation of severe 'depression', the symptoms of which betray a breakdown of reciprocal inhibition mechanisms which normally prevent the instincts of *sleep* (fatigue) and *flight* (fear) from becoming activated simultaneously.

Finding an animal model for most human psychoses may, therefore, be a futile prospect unless a species can be found in which, like us, the signals of an individual in distress have some power to trigger parental-care responses from more than just its own mother! The well-known neoteny of human development (recall Huxley's "After Many a Summer Dies the Swan") may partly account for the potency of helpless behavior to continue evoking 'altruistic' responses well beyond childhood. Not all of the psychological regression which occurs in senile dementia, therefore, necessarily indicates a deterioration of the brain's ability to function in an adaptive manner.

Quo Vadis?

Whatever the process going on inside the human brain which underlies the 'I/it' conscious dichotomy, it is surely to be best understood in the context of increasing *control* over the environment by the exercise of will-power: "mind over matter". It may be useful to distinguish several stages which are meant to apply primarily to *human* development, especially within a demanding social context. The three phases which I propose to define should be regarded as strongly overlapping - indeed, as lifelong functions - with their sequence being more a question of emphasis than an actual succession of discrete stages. Before all else (stage-one), there is a need for control over one's own *mind*, which involves learning new motoric combinations in addition to the storage and manipulation of (symbolically represented) sensory impressions. Once armed with a few coherent ideas about the nature of external reality, most people will begin to entertain thoughts of achieving a degree of mastery over it: the second stage (in which

the emphasis is on practical application of the knowledge gained earlier). Eventually there comes the necessity of peddling one's product and defending one's 'interests' - in short, for control over *other people*. The age-old triptych of "apprentice, journeyman and meister" very nicely illustrates the coexistence of all three concerns throughout life, despite the gradual shifting of the major preoccupation.

A corresponding cycle can be discerned in cultural evolution: taking the Hellenic classical period as an arbitrary starting point, consider the contrast between the burgeoning Greek city states and the totalitarian empires of Egypt and Babylon from which they absorbed their mathematical and technical knowledge. One is struck primarily by the revolutionary Greek advances in symbol manipulation - art and architecture, geometry and logic, poetry and theatre, politics and philosophy - rather than by their attempts to 'subdue' the material world through technological innovation. It was the Roman genius for implementation of these intellectual breakthroughs which created the civil and military technology which went on to subjugate much of the ancient world. This success, in turn, led to a scale of socio-economic operations which eventually engendered divisive tendencies exceeding the means available for keeping such an enormous realm together. The resulting shift in emphasis from material to social control - heralded first by the curtailment of republican liberties, later by the adoption of Christianity as a state ideology - while failing to save the empire from disintegration, ushered in a longlasting 'medieval' period in which human behavior tended to be strictly regimented. Thus, political and religious rights and obligations were explicitly hierarchical in structure, while spiritual and philosophical beliefs and attitudes were expected to conform with the absolutist dogma of centralized church authority.

It is interesting to note that a parallel development took place in China, there too starting from a politically decentralized situation ('Warring States' period) in which new philosophies and art forms flourished, and then progressing to a level of agricultural, industrial and medical applications which were the equal of contemporary technological developments in Europe. Along with a number of fascinating differences in philosophical outlook between the two societies which may have negatively influenced scientific development in the Orient, I suspect that it was mainly the centralized power structure and bureaucratized civil service which enabled the Chinese empire to retain its political integrity for so long. This, in turn, would have prevented the occurrence in China of a cultural 'Renaissance' (such as took place in the Italian city-states during the cinquecento) whereby a cycle beginning with the large scale exercise of creative imagination could start up again. Thus, had Charlemagne succeeded in forging more than an ephemeral continental empire, the same fate would very likely have befallen Europe - and what would have become of today's lecture?!

As things turned out, like the Romans before them, Northwestern Europe subsequently transformed the intellectual achievements of the Mediterranean polis-republics into an industrial revolution - several waves of them, actually - which has not abated even today (although unmistakable signs of a transition to the authoritarian third phase are becoming more and more evident). It is now becoming the human mind which, more than the material world, needs to be harnessed - in the interests of stimulating sufficient consumption to keep a hopelessly anachronistic laissez-faire economy from collapsing due to gross overproduction. We are therefore witnessing the spectacle of the earth's non-renewable resources being converted, at an alarming rate, into an assortment of incredibly toxic waste products which are becoming increasingly difficult to dispose of with even a marginal chance of avoiding a major catastrophe.

If this dizzying energy turnover were at least being used to find sensible solutions to current and future human needs, one might perhaps find some grounds for consolation despite all the devastation. The sad truth, however, is that the lion's share is being used to produce weaponry of appalling destructiveness, motor cars in plague-like quantities, and just plain junk of every conceivable description. With new problems thus being created faster than old ones can be solved, it may be only a matter of time before personal freedoms will tend everywhere to be regarded as luxuries which, on the whole, society can no longer afford. Much of the once democratic portion of the world has already gone that way, and the portion that was already totalitarian shows little sign of changing drastically. Even in the freest parts of the world, the immense possibilities opened up by advances in computer technology for effective control over larger and larger social units seems to be leading inexorably to mergers, take-overs, reorganizations, or whatever the name given to the increasing centralization of power over people.

An impending new 'dark ages', with its attendant prospects for severe curtailment of independent thought and behavior even in the North Atlantic nations (the traditional bulwark of anti-authoritarianism) is fraught with unprecedented perils. In an age such as ours, where the steady pace of technological progress over thousands of years has culminated in a potential for total annihilation being delivered into the hands of individuals who are being driven blindly by the same instincts for comfort, personal status or power that have dominated human behavior since time immemorial, a humble word of warning is hardly out of place... even in an inaugural lecture on a 'far-out' topic such as the ontogeny of brain function! A depersonalized attitude towards other human beings, the better to be able to manipulate them, cannot but lead to an increase in that sense of personal isolation and alienation which is feeding the obsession for unlimited

power over the environment in the first place. This vicious cycle of ever increasing control, leading paradoxically to ever increasing insecurity, is precisely the sort of stress which I implicated earlier in the possible etiology of certain forms of psychosis. The only satisfactory longterm solution, then, would appear to lie in learning to look (and feel) beyond the limitations of Ego-consciousness.