

Contemptus Mundi:
Reality as Disease

By

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...and so it goes. And so it goes. And so it goes. And so it goes goes goes tick tock tick tock tick tock and one day we no longer let time serve us, we serve time and we are slaves passing -- bound into a life predicated on restrictions because the system will not function if we don't keep the schedule tight... The Ticktockman: very much over six feet tall, often silent, a soft purring man when things went time-wise. The Ticktockman Even in the cubicles of the hierarchy, where fear was generated, seldom suffered, he was called the Ticktockman. But no one called him that to his mask.

Harlan Ellison, Repent Harlequin

PREFACE

Platonic Mysticism

All mysterious transcendentalisms share three characteristics. First, a belief in a supernatural realm that is "behind," "under," or "above" "mundane," everyday direct (personal) experience. This spatialization is important. It heralds a notion of dissociative spacing essential to sequentialism generally and hierarchization specifically. Sequentialism appears, for example, in the emphasis on word order in magical incantation and the order of premises in syllogistic logic. Sequential rule governance is the core of dogmatic fatalism, it is essential, meaning that it is a necessary condition for things to work as so constructed. The idea of discrete component parts like identical units of measure, and the process of fragmentation in the interest of knowing, derive from such spatial thinking. Operationalization is a highly dissociating supernatural process which holds that a thing is the sum of its measures.

Second, the supernatural "plane" of pure rules takes primacy over mundane reality so that mundane reality is dependent upon supernatural reality (Husserl, 1970). Mundane personal experience is also treated as less real, less generalizable than the supernatural realm of commandments, rules, and measures. This exposes an interest that is discussed below. Preoperational personal experience is fallible precisely in so far as it departs from the realm of pure and mysteriously knowable rules, including the sequence of rules one must follow in the process of transforming everyday life experience into a set of measures. Generating data and inferential derivations are cultural artifacts, not natural occurrences. They are supernatural. It makes no sense to ask what color one's chi square is or how much one's analysis of variance weighs. It is often presumed that a methodical process can somehow cure the fallibility of being an embodied consciousness by bringing the personal experience back into accord with the supernatural or transpersonal truth.

Method is a set of rules that supercedes subjective awareness, presumably correcting perspectivism by transcending it. This is the Platonic contradiction and hope that strictly governed thinking can enable us to "remember," or reorient to, the singular truth and thus be liberated -- to become self-transcending. By contrast, wayward souls are said to be "lost," "sick," "depressed," "insane." Experts in artificial intelligence, for instance, refer to belief in personal experience (the only kind there is) as the

“grandmother syndrome,” suggesting that to believe in one’s self is to be a well intentioned tottering (perhaps “logical” but ill-informed) old fool, tottering with the chronic imbalance of contingency. In this sense, method offers security, braces for weak legs, or more properly, prosthesis for the knowing mind to help prop up assertions.

Third, mysticism is simple. It is two-dimensional, “x” and “y.” In all mysticism vertical and horizontal generalizability is presumed. The distinction between the horizontal and the vertical is temporal.¹ The horizontal is syntagmatic. The vertical is paradigmatic. Horizontal generalization is synchronic. Sameness is spread across a stable system frozen in stasis. Relationships can thus be drawn between the component parts of the system with stable lines. Vertical generalizability is diachronic, like tracing the sameness of a root word “across” or “down through” time.

All mysticism purports to be space-free and time-free. Mystical claims are liberated from all existential, wobbly, qualities. Mystical truths are said to be universal and to not only take primacy over mundane reality but to “ground” it, to “cause” it, to “give” or “lend” it solid structure and therefore make it predictable and explainable. Even self-ordering, self-regulating systems follow rules that govern equilibrium and homeostasis. This shift in responsibility leads directly to an emphasis on the individual, as a cognitive system, to be self-governing and to be guilty for failures to conform to the Truth: to what is the case. There cannot be, by definition, anything “wrong” with the environment. All misery is the fault of the self-ordering self. This metaphysic/ethic is presupposed by social Darwinism, including the currently popular notion of cultural “adaptation” (see for instance Gudykunst & Kim, 1997).

THE SMART MACHINE: ROBOT AS MODEL MINORITY

According to Platonism, there are two kinds of awareness: Awareness of the Absolute and awareness of the contingent. Awareness, being the same as awareness of... leads to the conclusion that awareness of contingencies is contingent awareness, and awareness of the Absolute is Absolute awareness. Hence, mystics bend their wills to avoid even the memory of the shadow of a track in the contingent Lockean mud, preferring, in fact compelled, to stay focused on the transcendent, whereby One mind becomes no mind. Strangely, however for awareness of contingencies, the “shallow” mind of everyday experience, is a consciousness that does not have extension as a “thing” but duration. As Edmund Husserl’s (1964) researches demonstrate, consciousness is time, a phenomenon modern civilization is constantly battling in a vain attempt to get back to the timeless Garden prior to opposites and knowledge (Campbell, 1988; Gebser, Ger. 1949/Eng. 1985). Myth, be it of the ancient variety, or of UFO abduction, or to ironically “go down in history,”(permanent collective memory), or technological immortality (cyborgism), is the dream of escaping into the transcendental. It is no mere historical coincidence that at the same time that time became a central concern in modern art, philosophy, science, and everyday life (the addiction to speed), so too existentialism emerged as a direct defense of subjective, embodied, mortal awareness against the assault of transcendental objectivity (Gebser, 1985). The key to immortality, as wizards and Shamans have known for centuries, is to be able to extend, to exteriorize intention and cast it beyond the body. It is here too that automation (doing without knowing) becomes the ideal work-form.

The robot is the ideal model minority because it is absolutely deferent to authority, it labors without resistance, and it purports to be completely apolitical and

tireless. It is “amazing” in its supernatural prowess. Automation is frictionless. It is efficient. It is magic, for it moves by itself. It is “good.” By definition, it requires little management. But this “good” is not a universal good, though it may pretend to be. It is very much heralded because it is, like “synergy,” a value dearly held by all those who would rule including the dominant class in the industrial and industrializing world. Robotics is a moral philosophy: an articulation of values and desires. Robots and expert systems are even said to be “intelligent,” because they are so fast in computing algorithmic “solutions.” Solutions presuppose problems, and what constitutes a problem is very relativistic, very prejudicial, “subjective.” Problems depend on point-of-view.

Because mystical truths are purified of temporal pollution, time becomes a criminal in need of being “arrested.” And because this dominate ideology wishes for everyone to believe, to be hegemonically aligned, this “good” law enforcer, the “principle,” must appear to be universal, even “natural;” which means supernatural. Therefore, the sacredness of this worldly morality must be protected, quarantined from the charge of being a class interest, a mere opinion. The value of automation must appear to transcend the subjective mundane world, to be a timeless, mindless Truth. How could efficiency every be “bad!?” It’s unthinkable.

All standards for judging the mundane world, like “pure” logic and “pure” mathematics, and categorical imperatives, exist in the super- or trans-natural world. Standards (like units of measure and principles) that change, are not worthy of the name “standard.” Contingencies, like shadows on a cave wall, come and go in chaotic fashion. For David Hume (1973), nothing more could be said. But for Plato, and later Immanuel Kant (1929), “behind” the shadows is a solid rock wall that makes shadows possible, that is the permanent structural background to all ghostly foregrounds. For both Plato and Kant (1929) this is more than mere metaphysics, it is ethics in the form of categorical imperative. For Husserl, in his middle period of hyper-transcendentalism (the Ideas), the solid natural attitude itself had to be “bracketed,” ignored in favor of the eternal relationship between the wall and the mere fleeting wisp of form. Situations change, mortals come and go, but not the principles, not the rules by which they are judged.

By comparison, mundane, situational reality is reduced to being a collective hallucination, an epiphenomenon. Expert knowledge reduces mundane knowledge to mere opinion, an epistemological vagrant. Nothing is more marginal than the homeless. Opinions are ideas that don’t know where they “belong.” Under these conditions, consciousness itself becomes “false” (Marx, 1967). Experts know this. Expert reality draws its power from an “otherworldly” plane of apodectic certainty. Expert reality is true by logical necessity, absolutely. By contrast, mundane common sense is an infinitely inferior episteme. This duality constitutes what Arthur Lovejoy (1936) calls the “two world system.”

Content is contingent while form is eternal. Eternity is nihilistic. It is absolute redundancy. Friedrich Nietzsche is correct and Blaise Pascal is wrong. Hell is not chaos. Quite the contrary, the ruler who sits on the throne in the capital of Hell, Pandemonium, is an absolute disciplinarian, a mirror image of the Law Giver Himself. Hell is not hot, for heat is the sign of life. Hell is a cold and maddening redundancy. A place of absolute degree zero, the end of movement until all awareness sinks into equilibrium and equafinality – disappears utterly into oblivion. This is why, Nietzsche celebrates the struggle and passions of the mortal, embodied ego and not the redundant “Ram, Ram,

Ram,” chanting of religious ascetics and self-haters who are seeking to escape the “wheel of life.” Nietzsche is stoutly against the negativistic “positivists,” who worship the state of “no mind,” who strive to repress and suppress all instinctual expressions of life while trying to turn themselves into instruments, dispassionate lobotomized self-polishing mirrors that reflect whatever happens by, a mere recording device (Nietzsche, The Gay Science). The way Nietzsche (On the Genealogy of Morals) put it, all formal systems, including religions and sciences, preach the ascetic value of hating this world, denying the flesh (the subject) in favor of the eternal spirit (the object). They are motivated by fear.

Time, aging, that which occurs with being cast out from the Garden of Eden, is the source of the problem, the great original punishment to match the original sin of eating of the tree of knowledge (difference). The solution to aging is death. Likewise, god has no gender and the incarnate Christ is problematic in this sense. The chilling effect of rationalization sets in, tempting the body toward perfection: death. Rationalization has much to do with mysticism and mystification. Technology is mystifying. We hurriedly retreat from the wilderness of flux into standardized, sequential machine time. “History,” is born as the most credible legitimator of all contingencies making sure that nothing appears accidental, yet all the more powerful, beyond the scale of individual aspiration, for it is fatalistic order that enables if not predictability, at least 20/20 retro-explanation.

Ironically, in the face of fatalism, guilt becomes inescapable (Nietzsche, GM). History becomes “Spirit,” and with G.W. Hegel (1964), “Spirit” becomes Absolute Logic. It moves through “phases” with “iron necessity” like the sequential processing of functions in a mathematical equation (Marx, 1967); the ghost of fate. Resistance is futile; irony of ironies, revolution is inevitable. This is the modernization of pure dogma as reason and the “good.” Thus, Hegel invented the notion of evolution, not Darwin. And Hegel anticipated writers like John Holland (1995) and David Dennett (1991) who have reduced the evolution of the universe to a single algorithm. Both left and right Hegelians agree. What is to be done is the creation of the “new Man,” which is inevitable anyway, because the “old man” contains within himself his own contradiction. Happiness, positivity, is the alignment of behavior with historic imperative. Blessed are the conformists for they shall know mental health (Gudykunst & Kim, 1997; Kim, 1988).

The mantra of “adaptation” is chanted from Plato to Herbert Spencer and on. Adaptation writers even today claim that conformity to larger forces will bring “satisfaction,” “adjustment,” “sanity,” “balance,” “clarity,” “equilibrium,” “disintegration-reintegration,” a “higher level of self-understanding,” “greater cognitive complexity” and “maturity” (Kim, 1977; Grotevant, 1993; Gudykunst & Kim, 1997; Mezirow, 1991; Schroder, et. al., 1967; Heath, 1977; Kao, 1975; Wrightsman, 1994). In its simplest terms, adaptation is supposed to be a “cure” for the “disease” of culture “shock,” of real(ity), difference (Adler, 1987), which amounts to the extermination of meaning. Absolute conformity is death, the ultimate cure for the suffering of contingent existence: life. The key to salvation is to align one’s cognitive system with the larger system, a kind of hyper-modern astrology. Happiness is the area of overlap between the concentric circles of one of John Venn’s diagrams. Nietzsche would argue that this amounts to saying that the cure to life is death, that by minimizing pain one minimizes growth. Growth is impossible because, according to the carrying capacity of cognitive

systems, in order to be happy, to adapt, one must “unlearn,” “disintegrate,” the self in direct proportion to how much one “adapts” and forms a new self with new behavioral “consequences” (Gudykunst & Kim, 1997; Dabrowski, 1968).

According to Gudykunst and Kim (1997: 362) such a “disintegrating-reintegrating” self-erasure indicates personality evolution toward greater “maturity.” To agree with one’s parents or the system at large is to be “mature.” By this definition, the most flexible “intellect,” the silicon integrated circuit, must be the most “mature” personality around. Being an expert means being highly adaptive, “mature.” We are constantly assured that computers can do anything, except complain, which is perfect for exploitation.

Cultural “adaptation” writers all assume that life should not be dissatisfying, painful, irrational, opaque, or complex. They incorrectly assume that as cognitive complexity increases the world will become simplified. Expert systems continue the utopian dream of minimal anxiety and maximal slumber, of being able to do without knowing. This is what fans of cognitive economy call “minimalism,” the hyper-valuation of parsimonious heuristics, a modern cultural prejudice driven by a lack of time, a need for efficient productivity in the interest of personal accumulation (Chomsky, 1995). It amounts to a flight from the inconvenience of suffering and life, into the hell of nihilistic redundancy that spells the end of conscious, personal awareness.

SEEING THINGS: PATTERNS

The essence of the self-conscious and willful act of modern structuration is the transcendental control of time and space: movement, action. Modernistic control has been in the form of organizing/creating time and space as mathematical “constants,” as undifferentiated continua. A specific mentality and set of interests is thus articulated. Gebser (1985) has attempted to trace this attitude of patriarchal imperative. To this end he has noted that the first word of the first verse of the first canto of the first major work of the Western world, the *Iliad* is menin, which is the accusative form of menis (Kramer, 1997:80; Gebser, 1985:75). Menis means “wrath” and “courage.” It comes from the same word root as menos, meaning “resolve,” “power,” and “conviction.” Later, the Latin mens means “intent,” “anger,” thinking,” “thought,” “understanding,” and “deliberation,” (not liberation). This indicates the willful ordination of directional discourse and disputation.

Here we can detect the convergence of “mean,” as in to be belligerent, and “mean” as in the disinterested reduction to common denominators and the laws of “regression” and “central tendency,” and also “mean” as used in the phrase “ways and means.” This involves the structuration of discourse and what will count as knowledge. Thus it becomes hyper-valuation: “golden.” The call to global efficiency, to a “golden mean,” is a categorical imperative: “adapt” or fail to “succeed.” Automaton is perfect adaptation, the perfect slave who willingly accepts “psychic disintegration” in order to belong, to “fit” (Gudykunst & Kim, 1997: 360-362; Kim, 1988; 1995). The direction of conformity is structurally and functionally pre-determined (Kramer, in press).

Because of critical dissociation, structuration has become self-conscious about its contingency. For this reason, it is penultimately a political process. Power politics, as the struggle over which future will be favored, which implicates who should adapt to whose order, is a fundamental quality of modernity (Gebser, 1985). Modern control systems are all about power, which is all about justice and ethics: not in some abstract set of

principles, or mindless algorithmic inevitable efficiency, but as embodied ethics. A good example was the prolonged struggle between the “East” and the “West” called the “Cold War” wherein two systems struggled for supremacy. Since ancient cave “art,” the graphical display of a thing has been instrumental in knowing and controlling it. Control and knowing are relational phenomena. So we strive to display structural relationships as the control of the means of control.

In his book, Mechanization Takes Command, Sigfreid Giedion (1948) describes the first graphic representation (patternization) of movement by the Bishop of Lisieux, Nicolas Oresme, in his Tractatus de Latitudoine Formarum, around 1350. Oresme invented the vertical and horizontal graph known today as the “x” and “y” axes in order to represent graphically, “the changing qualities of a body” (quoted in Giedion, 1948: 17). But even before the concept of change was reduced to nothing but physical movement, one must go back to Aristotle and Theophrastus to see how conceptualization itself was born as an attempt to create classifications and systems in biology and botany in order to establish “a high degree of coherence and methodological order” (Cassirer, 1944: 216). Aristotelianism is, in a word, an obsession with arrangement.

This involves a widening gap of dissociation. For instance, Democritus described the structure of the atom but he did so by recourse to analogies taken from the world of sense experience. By contrast, Neils Bohr's model of the atom has no figurative imagery. Instead, by the time of Bohr, knowledge had come to speak the Pythagorean language of total dissociation, the mathesis universalis (mathematics as a universal language). According to Cassirer (1944) this version of language, “is not concerned with a description of things but with general expressions of relations” (Cassirer, 1944: 217). This new “Galilean” style of knowledge, as Husserl (1970) put it, marks the emergence of a new language-game that abandons referentiality entirely for pure ideality. Modern will-power-drive is focused on a not yet extant future, not on modeling things already done. In this sense, modern modeling is virtual, while un- and pre-modern models are mimetic. What the modern calls “modeling,” amounts to not yet realized designs on paper and computer screens. Like mathematics, the modern model has no referent. It exists only as an ought, not as an is. Herein is the essence of modern power politics.

Although Galileo and Descartes pushed for the mathesis universalis, in the hope that it would free knowledge of contamination from time (human contingency – mortal awareness), mathematics does not come into full dissociation until Leibniz in the seventeenth century (Cassirer, 1944: 217). This was based on what Benjamin L. Whorf (1956) calls the intensification of rigidified language by Aristotle (p. 238). In Leibniz, not Kant, Aristotle's categorical imperative comes to full blossom. The ultimate achievement remains fundamentally unrealizable for it involves the final purging of the one entity for whom knowledge has any value at all – the human being. Once this ultimate sacrifice is made, then, and only then, can knowledge achieve its full measure even though no one will know it. This is total dissociation; “pure knowledge” without a knower or a known! an inconceivable truth worthy of the highest status of mystique, the truly independent, disinterested Other.

Aristotle's drive for a knowledge that is categorical in nature, is a reinforcement of the Platonic contention that ideas are more real, more permanent, than contingent sensations. What I call the here and there of neo-Platonic Cartesianism. We find this mentality alive and well among the pioneers of artificial intelligence makers. For

instance, W. E. McCulloch (1970) waxes theological, Augustinian even, in his article, "What is a Number, That a Man May Know It, and a Man, That He May Know a Number?" published in 1970. But his question, like all theological ones, is rhetorical, for already in 1943, he gives us the answer which is that logical calculus is "immanent in nervous activity" (McCulloch & Pitts, 1943). This is what Nietzsche a century earlier had called an invention based on the error that there are identical things (Human, All Too Human, Section 29, *Number*), and the random agitation of the nervous mechanism, the metabolic disturbance of a pious disinterested instrument, the selfless man. This Nietzsche saw as the aftereffects of the most ancient religiosity, "atavism" (The Gay Science, Book Three, Section 127; Beyond Good and Evil, Section 207).

This idea of a purified deductive language is properly expressed as a "mystery" by the Hungarian mathematician Alfred Renyi, "Is it not mysterious that one can know more about things which do not exist than about things which do exist" (Renyi, 1967: 11)? This is understandable because the objects of mathematics are made, not discovered. Under a subheading in his book, which reads "TRUTH," Jerry King explains,

These objects are abstractions and have no existence outside of the imagination of the mathematician. They are endowed by their creator, the mathematician, with certain properties. From these assigned properties, using the laws of logic and the rules of mathematics, the mathematician deduces other properties. The objects are completely perceivable for they possess only the properties they have been assigned and the properties that can be deduced (King, 1992: 29).

Unfortunately King is quite naïve about the nature of language-games and conventionality. There is no such thing as a one-person language, and so, mathematical objects do not merely exist in the imagination of a single mathematician but presume a complex and shared mathematical notation, logic, and grammar, a linguistic manifold. Nevertheless, the point that King is trying to make is that pure ideality equals radical positivism.

Now one might conclude that imagination is boundless but this is not the case. The realm of number is instructive. Although Pythagoras was obsessed with the nature of number as a mystical entity, Plato ties it to logic. And no system is more rule-governed than mathematics.

A single number is only a single place in a general systematic order. It has no being of its own, no self-contained reality. Its meaning is defined by the position it occupies in the whole numerical system. The series of the natural numbers is an infinite series. But this infinity sets no limits to our theoretical knowledge. It does not mean any indeterminateness, an Apeiron in the Platonic sense; it means just the contrary. In the progress of numbers we do not meet with an external limitation, with a "last term." But what we find here is limitation by virtue of an intrinsic logical principle. All the terms are bound together by a common bond. They originate in one and the same generative relation, that relation which connects a number n with its immediate successor ($n+1$). From this very simple relation we can derive all the properties of the integer numbers (Cassirer, 1944: 212).

This constitutes what Cassirer calls the “greatest privilege of system” (p. 212). But Cassirer claims to “find” this privilege to be “intrinsic” because logic is intrinsic. This is the epistemic force of postulation. Postulation is the quintessence of perspectivism. As Archimedes said “Give me a place to stand and I will move the universe,” which Cassirer interprets to mean that, “In a changing universe scientific thought fixes the points of rest, the unmovable poles” (Cassirer, 1944: 207).

A grand example of this is the famous “magic number seven” (“plus or minus two”) argument put forth by the Princeton psychologist, George Miller, who convinced the Skinnerian, Marvin Minsky, in the early days of artificial intelligence to pursue the study of learning. According to Miller, in his famous 1956 article, “The Magical Number Seven,” we suffer from an inability to keep more than seven bits of information in short term memory at a time. Thus, Miller argued, long after Kant had already demonstrated it!, that the mind must be an active processor of information, not merely a passive association mechanism (expressed as behaviorism). Hence, the birth of the “learning machine,” comes from a rather dubious postulation, a magical one of course, for all axioms and postulates are made up, “given,” some have said divinely. Why just seven? There are those who are more “gifted,” more imaginative than others at doing magic.

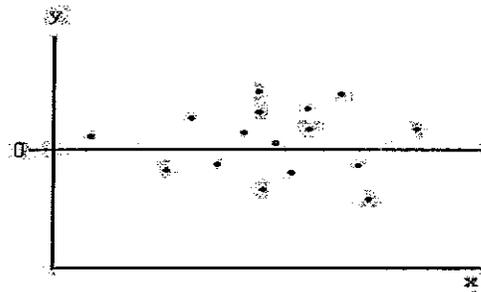
Modern perspectival logic comes to rest at its final, magical, destination, the ground of axiology. We “make” presumptions that come to act as axioms anchoring the roots of our decision trees. Egocentrism is inflated to be the referent for all reality. Logic “floats” aimlessly until it comes into the realm of praxis, until it is grasped as an instrument and “applied” in order to infer, and deduce from axioms that are magically “given.”

COUNTRA NICHISM

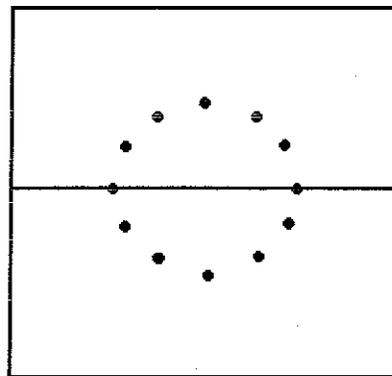
Patterns and the Seer

Plato is defeated even when it comes to the nature of form. The idea of pattern or structure is senseless without subjective point-of-view. There can be no sense of pattern or structure without subjectivity, without perspectivism. This means that the privilege of which Cassirer speaks amounts to privileging a specific point-of-view, the “hypertrophy” of egocentrism (Gebser, 1985). Objectivity is the objectification of a prejudice. The isolated subject is a consequence of the same perspectival mentality that spatializes time and knowledge itself. But this means that patterns and structures are not intelligible as realities separate from perspectival consciousness, which involves and may even expose manifest interests the way a Rorshach Test or a single dimensional Q Sort does. Most importantly, because perspectivism is always contingent, and is evident even in computer programs, then so too are the patterns and structures that exist relative to point-of-view. A perspective is a confluence of personal interests and limitations.

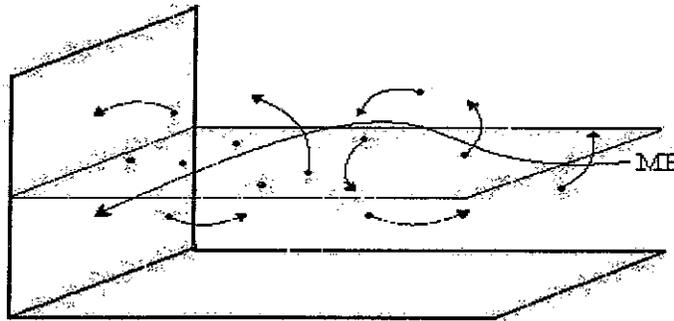
For instance, in the first diagram below we have the typical two-dimensional reality generated by the ever popular “x” and “y” axes. What is presented is a “random” distribution plot.



Now what if we add one dimension which enables just one other modality of viewing, allowing us to move around to the right and look at the plot from “over there.”



As is obvious, the “random” distribution, as seen from a second point-of-view facilitated by a third depth-dimension, suddenly becomes an intelligible pattern. Now what if we add a fourth dimension? Time in space is movement. With the introduction of time, we can move freely among the plot points and an infinite number of adumbrations become possible.



Identity is co-constituted on multiple levels depending on myriad possible computations of points including the one called “me.” The possibilities are endless: The patterns that may emerge are uncertain. But what is clear, is that the patterns one perceives are dependent in part, if not altogether, on point-of-view, which is nothing other than knowledge (awareness), the relationship between the so-called subject and object which is neither subjective nor objective.

The pattern is neither “out there,” nor “in my head.” It is dependent on orientation, which is integral to “both” but reducible to neither. Orientation is a co-constitutional process. Like a shared wall that makes/“separates” two rooms, an organism shares “its” skin with the world. The shared contours constitute “fit.” But which is fitting which is not prioritized because without both, “fit” does not exist. So-called evolutionary niches do not exist independent of and prior to that which “fills” them like some sort of Lockean mud. If anything in the universe is active, not passive, it is life. The universe is not an empty parking lot with spaces awaiting malleable occupants. The “occupants” make the spaces. The idea that the universe, the Absolute, Logic, or History uses humans as its medium is not the case. Without humans there is no history. There is no dualism. The organism is the niche.

The subject is a necessary condition for the existence of patterns and their structures. The subject is the most important “point,” for it is the point-of-view which is privileged simply because it is the source of synthetic being. It is where patterning happens, where passive and active syntheses occur. As Maurice Merleau-Ponty (1964) noticed in his study of bodily comportment, “I” am always the center of perceived space. This includes virtual space. This must be recognized unless one insists on promoting the dualistic metaphysics of speculation as articulated by such luminaries as Francis Bacon, Rene Descartes, and later Immanuel Kant. The *noemenal* side of the split forms the mysterious realm of Being-as-it-is-in-itself; the *ontos on* as opposed to the *doxic* relativism of subjective awareness. By this disembodied mystery, all awareness is reduced to mere opinion in the face of some unknowable, yet known to be different, reality (Kramer, 1997). According to this metaphysic, truth is an issue of referential fit. But, like an organism, statements are not passive. Words do things (Austin, 1975; Wittgenstein, 1953). Words, and “nonverbals” are the semantic environment, the communicative ecology of *homo symbolicum* (Cassirer, 1944). Even ants make nests.

We have no way to demonstrate that patterns, and their structures (which simply means the names we give to different “kinds” of patterns like bimodal, elliptical, hierarchical, repetitive, etc.), exist independent of our awareness of them. But we have in every moment of life evidence that patterns change with changes in our point-of-view which can be altered through education, experience, physical movement around physical surfaces, and many other variables. Moving from one prejudice to another, one method to another, changes the meaning of things.

Expert systems and embedded networks manifest attempts to disembody and freeze one perspective, for all time and to label deviation a feedback “error message.” Why? In order to preserve a status quo, to keep the direction and flow of capital running smoothly. This is why the ideology of conformist homeostasis, “equilibrium” and “balance,” from the conception of the golden mean on, is fiercely and relentlessly promoted as the “right,” “true,” “just,” “beautiful,” and “good.”

Expert systems, which are automated doing without knowing, cut off the possibility of variance, dialogue. And not merely because they are closed and automated, but also because they are “experts.” Who am I, of the great unwashed masses, to challenge the know-how of countless disinterested accountants, lawyers, engineers, and the almighty force of the market, condensed onto a silicon chip. Dummies, like children, should quietly adapt, for their own good too. They should be seen, monitored, but not heard. They claim to exclude the source of corruption, the perspectival, embodied conscious subject. But in fact, expert systems magnify the perspective of the person or persons who program them. Expert systems are handmaidens to homogenization (globalism). What is sought is a single “global perspective.” And since “objectivity” is really intersubjective agreement, the more people there are who see things in one way, the stronger consensus becomes (Noelle-Neumann, 1984). This is the power of the consensus theory of truth, which can be greatly exaggerated through technological expansion, the new power of the herd. Sanity itself is defined as identity; being identical with “the program” not “deviant.” “Inclusion,” that innocent sounding desire, means the extinction of difference. It is the paved road to nihilistic sameness.

The word “prejudice” here is used the way Nietzsche (*The Gay Science*) and later Hans-Georg Gadamer (1975) use it. For Gadamer (1975), a prejudice is neither necessarily good nor bad unless it is forced onto others making them “one.” This is why “holism” is not the same as integration (Gebser, 1985). Holism blends away difference and therefore it promotes nihilism, while integration preserves differences enabling an increased communication between them thus increasing meaning. Prejudice enables valuation and all other modes of personal experience (again, the only kind there is). Prejudice means the inescapable condition of awareness being perspectival. But if everyone shares the same prejudice, it can no longer be seen as such, it becomes Reality with the imperative power associated with the inevitable. Nietzsche (in *The Gay Science*) argues that there is no escaping prejudice without becoming unconscious. What he is talking about is the dogmatic secure slumber of dozing in the midst of the herd. Husserl (1982) called this the untested thesis of the nature of mundane reality, the “natural attitude,” which for the unreflective, remains a profoundly large blind spot. The limitation of a perspective (for instance, Miller’s seven bits of information) is exposed only by another point-of-view; difference.

Identity depends on difference (Heidegger, 1969). This is why homeostasis (sameness) is so deluding. Finality, or we can be generous and even speak with Ludwig von Bertalanffy (1968) of "equifinality" (many paths to one conclusion), as Hegel's solution, the end of history and life. With a goal, progress can commence. Thus we have positivism beginning its dirge, its manifest destiny. Being absolutely right is utter self-blindness. The definition of a truly blind prejudice is when the hairpin turn of the cybernetic loop is so tight as to be constipated with the self-same. Thinking and communicating gets stopped-^{up}but. Under such self-identical "actualization," it cannot even occur to one that it might be possible to question one's own reality as being one's own -- contingent (Gadamer, 1975).

Expert systems attempt to stop interpretation and dialogue dead in their tracks, settling on one preferred version of reality. To reach what Roland Barthes (1967) called "degree zero" writing, like Bertrand Russell and Alfred Whitehead's failed dream of creating a totally dissociated, totally artificial language that could resist all interpretation, all ambiguity, but One (Russell & Whitehead, 1967). What must always be asked is; whose interests are served by the particular version of reality being institutionalized?

Patterns and their structures are the synthetic results of perspectivism with all its various prejudices. What people see in the stars tells me less about the stars than about the people doing the seeing. Structuration involves projection and reification. Knowledge is always personal. With change, the textbooks, including those for history and physics, must be rewritten to give the new and improved (privileged) truth. The "now" is always privileged. But it is no less perspectival than spatial centrism, for "I" am not only at the center of spatial awareness but also temporal awareness. The world is "my" world, and the "now" is my ever-present but never the same now. It never sticks around (Husserl, 1982).

The Greek term *episteme* is derived from a root that means firmness and stability. What could be more firm than the privileged point-of-view, which is in the end, subjective? The scientific process is an effort to stabilize and consolidate "the world of our perceptions and thoughts" (Cassirer, 1944: 207). To, as Nietzsche (in *GS*) said, grasp the universe with "iron clamps." Who does the grasping? Presumably no mere subject, but instead a transcendental institution, knowledge/power.

Structuration is, paradoxically, the process of inventing so-called transtemporal conceptualization by inflating perspective to universal validity. It is essentially the ego-centric fallacy writ large, a convergence on a collective fantasy theme, a community narrative (Fisher, 1997; Bales, 1970; Bormann, 1972). What Clifford Geertz (1983), following Alfred Schutz, calls, "local knowledge." Only the absolutely naïve or narcissistic person believes that their local knowledge is all. Contingent structuration is at the very core of civilizations and their respective senses of what is real and true, thus being the foundation for ethnocentrism. Concept is born with Plato and instituted by Aristotle. Democracy emerges with them, for modern structure is not preordained but conceptual and available for disputation. Modern structuration, opens the world to infinite possibilities and therefore, absolute responsibility. Modern structuration has led to the specter of moderns being self-made humans which does not extricate us from responsibility but instead makes our world more and more judgmental, more and more a combat zone of competing ethics and interests.

In so far as he doubted the staying power of things, including definitions, Heraclitus marks the advent of postmodernism, before modernity. Plato, like all modernists, was a reactionary. In reactionary style, modernism responds with Socratic dia-logic, which “matures,” or solidifies through Platonic writing until it is frozen into a mono-logic (with expressed rules) by Aristotle. Aristotle's effort was to establish definitive limits to semantic fields. But the attempt to freeze the world is a sure clue that it is a highly changeable liquid. The prevailing quality of the modern and so-called postmodern world is its Protean sense of ever-present potential; the always present open horizon of time. Once humans experienced distancing that enabled self-reflection, then a dawning awareness of a world with boundaries emerged. And boundaries are meant to be crossed; rules are meant to be broken. Humans become law-makers and not just followers.

ETERNAL FORM AND ACCIDENTAL CONTENT

Now let us look very briefly at logic. In an attempt to escape the charge of being subjective, logic becomes “pure form.” A valid argument is not the same as a sound one. Deductive form yields either a valid or invalid argument. The soundness of the deductive argument is completely irrelevant to its validity. The inductive form of thinking yields claims that vary in terms of their “soundness,” meaning their probable truth, or the degree to which they are sensical. The classical syllogism is a form of argument that risks nothing. It does not attempt to go beyond what is already available in its premises, and so it offers no attempt to predict what will happen next. For this reason, the form of thinking which is deductive does not involve probabilities. Deduction, as the champions of induction have argued, has no necessary connection to the mundane, existential world.

The deductive form of thinking looks like this: If all A are B, and all B are C, then all A are C. This is a valid form of argument. We can replace A, B, and C with penguins, nails, and nightmares thus: If all penguins are nails, and if all nails are nightmares, then all penguins are nightmares. This is a valid argument. That is to say, it is valid as a function of its form. It is even valid if we say that A is “penguins” and C is “not penguins,” so that the conclusion would be “All penguins are not penguins.”

In terms of semantic content however, this argument, although valid, is not “sound.” Of course “sound” is still tied to the body while form is not. Why is the claim that all penguins are nightmares not “sound”? Because, existentially speaking, it is pure nonsense. This is the point of Noam Chomsky's (1965) famous string of words: “Colorless green ideas sleep furiously,” which is grammatical although “semantically anomalous.” When we stop to ask what do such sentences mean in terms of the mundane world of real penguins, nails, and nightmares, or colorless colors, it makes no sense.

The soundness of an argument is a matter of the implementation of the argument in the mundane world. According to the inductive form of thinking, an argument can never be valid, because validity is a purely formal judgement, but knowledge can be very probable, and therefore one can constitute a sound argument. We can go beyond what is already present in the premises and take a risk.

Computers can follow a line of 1's and 0's very fast, but the issue is what counts as a “salient” and/or “relevant” difference. It is a matter of tradition, judgement, desire, need: in a word living embodied conscious awareness and its contingent situatedness. No doubt a computer can be programmed to sort, but it cannot write its own “first program.” Nor can it understand why, or even what it is sorting. As John Searle's (1980; 1984;

1987; 1990) Chinese Room parable demonstrates, a computer can very quickly do serial calculations, which means that it can manipulate symbols “competently” according to syntactical rules, but that has nothing to do with understanding what the symbols or rules mean. A computer cannot determine the “soundness” of a statement.

In the Chinese Room parable, Searle (1980) puts forth the supposition that he be locked in a room filled with piles of cards with Chinese characters on them. From outside, “programmers” send him instructions in English that guide him on how to correlate certain recognizable but not conventionally understood input, Chinese characters, with certain output, more Chinese characters. Searle is illiterate in Chinese, meaning that he does not share the Chinese language-game (its applicability) with Chinese speakers. He cannot manipulate Chinese in a sound, sensical, way on his own because he does not know Chinese in the sense of understanding its meaning. As noted above, objectivity is really intersubjective agreement: politics. Concensus presupposes communication and a shared linguistic (semantic) field. Therefore, one can argue that “this Chinese character means thus and so,” and claim that this is simply a matter of fact, nothing personal about it. But that does not mean that ultimately it is not an arbitrary judgement. Searle can perform the tasks assigned to him in English without error but he will never understand what the Chinese or the combinations of Chinese mean. In short, he does not understand what he is doing. Although he may manipulate the symbols for many years becoming faster and faster, he will never learn what they mean for that would be like learning Chinese from a Chinese-Chinese dictionary. Only existential implementation can escape logical tautology. Only if he can relate Chinese to a grounded symbol system that he already knows like translating Chinese into English, can he learn what the Chinese means.

As anyone who has tried to learn a language in absentia of its cultural environment knows, even with a bilingual dictionary and the presumption of having access to “grounded language,” it is very difficult. Language that is “grounded” is not a disembodied set of arbitrary symbols. Such a belief is the essence of what Chomsky (1966) correctly calls “Cartesian Linguistics.” Instead it is an integral part of the lifeworld. Language is learned through comportment, doing things with it and having it do things just as speech act theory claims (Austin, 1975; Wittgenstein, 1922, 1953). Language is not merely a set of arbitrary labels. Rather, language is an essential part of embodied awareness (Whorf, 1956; Sapir, 1949; Hall, 1983; Heidegger, 1962).

Computers do not take risks. Like clerks who mindlessly go through the motions and come to ridiculous conclusions about how much change they owe their patrons because they are not paying “attention” to what they are doing, computers cannot pay attention to what they do. As Robert Jahn (1981) of Princeton has argued, looking for consciousness in a “mechanical brain” is like looking for actors inside your television set. This is the essence of automation. Computers cannot step back, or out of the program, and “eyeball” what they have concluded and judge whether or not it makes sense within a larger existential (changing) context. They cannot choose to shift perspectives. Computers can calculate the “degree of probability of a correlation,” from sheer accident to almost total certainty (1.0), but they do so in a fixed field, purely formal, “hardwired” way. They do not know what a probability is. They cannot shift frames at will, experiment with different combinations just to see what new sense may emerge, because they have no will. Computers do not know what a frame is. Fixed feature programming,

like statistics, is comprised of a set of purely logical relationships, and as such statistical results are deductively derived. "If this, then that," must be the case. That is why, garbage in, garbage out. A computer can come to ridiculous conclusions because it cannot "eyeball" a result and recognize that what it means cannot be correct. Meanwhile, every day I encounter people who speak to me in varying degrees of grammatical correctness, and yet I know what each of them means.

Sometimes people like Simon Newcomb, to be discussed more below, even refuse to "eyeball," that is to take seriously the mundane world of direct personal experience, insisting instead on sticking with the world of pure form even though it is ridiculous to do so. The mystical has no sense at all without the mundane and so "intelligence" requires existential implementation.

EYEBALLING THE EYEBALL

We turn now to a traditional, if not venerated form of discourse, a parabolic narrative, which is to say a story, the focus of which, may yield some better insight than the mere recitation of facts.

Epiphenomenalism

Let's assume that Georgette is a student in a university biology class. She is an outstanding student with a perfect grade point average and hopes to become a medical doctor. In the current class she is studying the bio-mechanics of vision. In the class she learns that the eye is a fleshy humor filled with an aqueous solution. It has a lens that focuses light onto a multi-layered area of the interior wall of the eyeball called the retina. The bowl shaped retina harbors several types of cells including rods and cones that detect light and dark and color. There exists photosensitive pigment in the retinal cells and the eye generates two types of electromagnetic waves that are carried by the optic nerve. She learns that the sclera, the white part of the eyeball, is insensitive to light. She learns about ganglion cells, amacrine cells, and the serial connectivity of synapses.

She has been taught that color is actually an epiphenomenon of electromagnetic wavelengths that are conventionally thought to form a "spectrum" of visual light from "violet" down in frequency to so-called "red." This of course presupposes the most rudimentary form of mathematical language, numerical sequence. She is taught that color, as an epiphenomenon, is a "quality," which the teacher is not interested in, preferring instead to concentrate on the quantifiable, real causes of this "subjective by-product." The teacher suggests that if anyone in the class is interested in color, they need to go over to the art department.

For now we shall only mention in passing that the teacher neglects to teach Georgette about the empirical fact that the pattern called a "spectrum," which is based on the ordination of numerical frequencies, is a synthetic product of human intervention and does not exist independent of human agency (for neither numbers nor spectra exist independent of human cognitive "chunking" and naming). "Electromagnetic waves" may exist, but the "spectrum" is just as much an epiphenomenal product of human agency as color. In short, the patterns that enable scientific sense-making are themselves epiphenomena. All patterns are privileged on the basis of some utility, some perspectival interest, be it aesthetic, pragmatic, or mechanical/logical (by necessity). Patterns are established just like data are "generated," not discovered. The "accuracy" of data and patterns is based on the existential soundness of the claim. We struggle to make sense and make arguments.

Science is not a naturally occurring phenomenon. Rather, it is a cultural artifact. Indeed all knowledge is a product of human volition. Without being particularly aware of it, Georgette believes that if you extend the teacher's logic, then all knowledge is "artificially" epiphenomenal, a semantic surface that is an accidental consequence of random physical vibrations, or so the story goes.

She reflects. Francis Bacon did not discover the scientific method laying in a forest somewhere. It does not weigh "3.8 kilograms," and it is not "pink." If pressed, the perspective the teacher has taken leads to the conclusion that not just all knowledge, but methods too are epiphenomena. The distinction between organic computation and inorganic computation, and more importantly between computation and graphical display, becomes totally arbitrary and therefore senseless. Being an advocate of "strong AI," the teacher would be pleased to discover that he had effectively erased the differences between human, machine, and natural "symbol" manipulation, but at the same time horrified to relinquish the privilege computation has by calling it too an epiphenomenon. Suddenly the distinction between "natural" and "cultural" is gone, and with it the meaning of each word. Gregory Bateson (1951) and Norbert Wiener (1948) are vindicated, everything is a tool, even god has a cause to be the "first cause." Divinity and creation are cybernetically intertwined.

ECOLOGY AND THE FOREST OF INFERENCE TREES

The universe is one giant inference engine, an expert system with no programmer. It is a self-organizing system. The universe follows the dialectics of a decision tree down an unknown number of simple manipulations until "it" reaches "the desired goal" (Crevier, 1993: 45). Along the way, consciousness emerges by "pure" accident. In so far as the universe exists, accidents are the necessary condition for being. However, the notion of a "desired goal" goes to the idea that consciousness is not merely an unintended consequence of other evolutionary actions but instead is the result of adaptation, which implies that consciousness increases the likelihood of survival, that it has use-value, that it is a useful accident. But use-value, such as increasing the likelihood of survivability, is ecological, meaning that it involves bodily interaction with an environment, including other humans, which "tests" the adaptation. Therefore, if consciousness is the result of either punctuated or gradual evolution (it doesn't matter which), it, as a useful accident, is an ecological phenomenon. This means that consciousness has an embodied perspective such that it coordinates capabilities unique to the human organism relative to environmental characteristics: how fast it can run, its lack of thick body hair, its jaw strength, et cetera, integral and respective to its surroundings. Coordination is done with surviving in an environment, "in mind."

In short, consciousness is not a purely formal epiphenomenon, nor is it some sort of disembodied calculator, but an integral synthesizer of the human lifeworld; that is, the human experience of being in the world as an incarnate awareness. Like Nietzsche (GS, Section 39, *Of the "Genius of the Species"* and HAH, Section 28, *Language as Putative Science*), Morris (1969) argues that consciousness makes social interaction and therefore cooperation among individuals possible. Therefore consciousness is essential to human survival. Certainly rocks don't seem very sociable, but then neither do they seem to be struggling to survive (Deacon, 1997).

Much has been written about using stochastic models to explain the evolution of discrete characteristics among a group of organisms that transcend the lifetime of a single

individual. An example is the generation of confidence sets for the path of evolution by deriving Markov Chain Monte Carlo simulations of "a Bayesian posterior distribution on the space of dendograms. A transformation of the tree into a canonical cophenetic matrix form, with distinct entries along its superdiagonal, suggesting a simple proposal distribution for selecting candidate trees 'close' to the current tree in the chain" (Mau & Newton, 1999). The idea is to use, for instance, a Metropolis algorithm according to the 0-1 law which holds that if we go back to the Jurassic Period, for instance, the success of animals resembling humans had a probability of less than 1 but more than 0. And that we should be able to estimate the true probability. In the fervor of theoretical masturbation, these writers seem to have overlooked "who" is doing the estimating, or why. Obviously, existentially, those "animals" succeeded at a probability of 1.0, for a given time frame. In the future, humans may go extinct, in fact they will either die-out or evolve into something different. Extinction will modify what one means by the "overall" "success," of the human species. It's "success" may even come to be seen as its mere ability to get beyond itself, to evolve into some subsequent descendant that judges itself (from its perspective) as "more advanced." Holland's (1995) theory of the genetic algorithm has led to an argument over whether there is "enough time" for consciousness to evolve algorithmically or if the fossil record proves that life evolves, as Gould (1982) puts it, in "long status and big short jumps." Again, it seems patently self-evident that there was enough time, or else who is doing the calculating?

Buried in this surrealistic bickering is the hinge of the argument concerning the status of consciousness as being either an adaptation to contingencies or a purely inconsequential accident with no discernable feedback value (the mind does not communicate).

The notion that consciousness is implement independent, which strong AI people claim, disembodies intelligence, what critical theorists have called the truncation of the world via beheading. This means that not only is consciousness not integrated with an environmental body, but that decisions have no social cooperative consequences, meaning no ethical import or communicative aspect. Intelligence has no ethical dimension to it, no worldly content. And yet, proponents of AI are much more concerned with measurable efficiency ("success") than evolutionists. Strong AI people also herald the speed with which computers can execute or implement commands, and how consciousness can emerge from the dumb movement of the evolutionary algorithm. "Efficiency," is a matter of parametric use-value (within an interested environment). For example, for strong AI, distributed memory (in the brain) is "good," if and only if, one takes into account the possibility of stroke or head injury. Disability has to do exactly with the inability of a person to integrate with environmental structures in a particularly desired way. Each animal has different "abilities," and "disabilities." "Ability" exists only from being tested. But there are many correct answers, many adumbrations to the test of survivability. "Competency" results from a kind of environmental testing which presumes ecology.

But "the environment" is a frame that is not fixed. It is an interdependency. Both the "organism" and the "environment" are boundary conditions. The boundary is dependent on bodily criteria which determine perception such that different animals "see" different "spectra," inhabit not just different "niches" but different worlds (Von Uexkull,

1957). In other words, humans may be aware of only a small fraction of the universe and then call that fraction the whole.

As I change, the “environment” changes, and vice versa. This is why I prefer to speak in ecological rather than environmental terms. Ecology is continually changing. It shifts with the expression of human agency like the use of telescopes, microscopes, ideas, and unspoken presumptions. Parameters are continually shifting so that even the claim that human awareness is embodied does not mean that it is fixed and limited to the mechanical criteria of that body, because how it is used, changes. What is “competent” in one context may be incompetent in another. This extends to species level criteria so that human “competencies” may be “disabilities” to a shark. “Good” and “bad” are relative. One can make the environment work for oneself. Environmental “fit,” is as much, if not more, a matter of making a “niche” as finding a niche “already there.” And the process of making a new niche involves making new competencies. This is why, social Darwinists like Gudykunst and Kim (2000), who equate adaptation to achieving a “functional fit” within a pre-established cultural system (behavioral conformity to a pre-established “niche”), have a woefully inadequate understanding of system dynamics and how the process of cultural fusion works (Kramer, 2000). All animals change their environment because they are the “environment.” Life changes the environment as much as passively adapting to it. Life is continually diversifying, making “niches” that never were before, even when it is already profoundly successful. This is why life on Earth didn’t stop with phytoplankton. Only fascists see life as purely reactionary, conforming (see Kramer on Nietzsche’s critique of Herbert Spencer, 2000).

Answering one’s own questions, like a solipsist, a closed system, is not much of a test of intelligence. As Wittgenstein argued, there is no such thing as a one-person language. “Intelligence,” including seeing, taken in a non-Cartesian, ecological sense, has much to do with embodied competencies. There must be difference (an “outside” to the cognitive system) that implements a non-rhetorical quarry. Intelligence is an embodied, set of competencies, which are not fixed and more than unilateral adaptation to an environment, as when a person becomes injured and helps to form an all new athletic enterprise like wheelchair racing. If intelligence has anything to do with “success” and “survivability,” then there are many more kinds of “intelligence” than dissociated computation. True intelligence is active, not reactive. As soon as Garry Kasparov began to react more than act towards Big Blue, he lost.

Contrary to this view, according to proponents of strong AI, like Dawkins (1996), it is the case that god is a “blind watchmaker.” As mentioned above in relation to Hegel’s Absolute, there is nothing outside of god. The universe is a watch that must make itself, a self-organizing closed system. If people are part of the universe, and if people have purposes, then at least part of the universe manifests what is called purpose, something which computers do not exhibit. But Hegel was incorrect. The universe has no edge. That is why it has no “outside.” It is not a steady state. Not only does the “environment” test organisms but they test themselves and it. Furthermore, a closed universe is problematic in terms of the second law of thermodynamics, which holds that entropy increases in any isolated system. This means that if a system is isolated it moves towards equilibrium, that is to say, maximal disorder, and its internal energy state declines. In an organ like the eye, this means that in a prolonged absence of light, one goes blind, or to reverse the situation, as Gebser (1985) put it, the existence of light called

into being the development of the eye. But this does not explain the wide variety of eyes and visions that exist. To “decline” means to “atrophy.” This seems to indicate “purpose.”

Both greater complexity and “order” has come out of the big bang. In classic ratio thinking (albeit inverted), as energy is minimized, entropy maximizes. When there is no more usable energy, a system proceeds to equilibrium. If the system is divided into subsystems then the system may still obey the second law of thermodynamics. It is even possible for a subsystem to exhibit a decrease in entropy at the expense of its environment. But, there is a special class of subsystems whereby a subsystem’s organization depends exclusively on an internal process (within its “boundaries”) that, despite having no environment from which to draw energy, the subsystem can oppose movement toward equilibrium by following the principle of “least action.” This translates into efficiency and energy conservation. Here we have the physical justification for conservatism. But again, this does not explain the variety of “solutions” to the problem of survival unless one can admit that it is not true that each problem has only one best solution thus abandoning the laws of parsimony and conservation in favor of a liberal theory of intelligence and life.

GODEL’S PROBLEM WITH DISSIPATION -- CONSTIPATION

All self-organizing subsystems are said by I. Prigongine, who won the Nobel Prize for the idea, to have a “dissipative structure,” (Prigongine & Stengers, 1984). Mathematical modelers presuppose that the universe, including the human brain, is efficient. Computer models of neural processing, such as Hopfield Networks and the Boltzmann Engine, attempt to minimize entropy and to therefore maximize information.

What’s that? In case you missed it, energy has suddenly become “information.” We just made the ontological leap from thermodynamics to mechanical hermeneutics (information theory) without seeing the poetic, metaphorical art of it. These are indeed creative thinkers. Obviously we are organizing a new conceptual realm by loosely, with “poetic license,” exploiting already extant semiotic systems, and “outside” ideas. This is a common form of poetic and neighborly “progress” these days. Sigmund Freud borrowed a cup of thermodynamic theory to apply to his recipe for the human psyche. How is this justified? By the sheer “sound” of it. Such theft (for some have protested the borrowing) allows the writer to sound “scientific.”² And many dearly want to sound scientific. This story, this narrative could not itself, be conceived by a computer. We continue.

A dissipative structure self-organizes in such a way as to optimize information storage. But where does the information come from if not the environment, the people outside the Chinese Room? The Chinese on the cards inside the room is non-informative to the illiterate in there too, because it is not “grounded.” Indeed, in the absence of literacy the marks on paper may seem to serve no purpose. But this is merely a perspective, an illiterate one.

The idea of an isolated, context-free system seems to be purely theoretical. Furthermore, even in the virtual world of pure mathematics there are problems with the functioning of dissipative structures. In 1931, Kurt Godel (1931) proved that within a system there exists questions that are neither provable nor disprovable on the basis of the axioms that define the system. This is Godel’s Undecidability Theorem. He also showed that in a complex system where the decidability of all questions is required, there would

arise contradictory statements. This is Godel's Incompleteness Theorem. Combined, these two limits mean that there are problems that cannot be solved by any set of rules or procedures unless one "extend" the set of axioms or, and Godel did not mention this, exercise poetic license. This forces the question of how do we know what a problem is, and when it has been (re)solved.

Valuations like what constitutes a problem, a competency, an ability or disability, are not "innate" to an isolated and discrete organism. They are evaluations assigned to arbitrarily framed and "weighted" relationships one chooses to attend to. Human beings arbitrarily cut texts out of the world thus also creating contexts in the process. Humans foreground and simultaneously background aspects of the world according to subjective point-of-view. Depending on one's perspective, this can take the semantic signature of problematization or thematization, or other form of sorting and identifying. The point is that what "counts" as a "problem," a "priority," and/or a "solution" is not at all independent of human volition, human wants, desires, and needs. Computers have no problems. They don't care. They have no needs, ambitions, or aspirations.

Furthermore, what I have argued is different from Godel and Roger Penrose (1989), but it has similar consequences for strong AI. I call it the principle of infinite solutions, which leads to a polymorphic and interactive concept of intelligence and competence.

Front and Center with a Nietzschean Aside

Nietzsche, reminds us that science is neither the only way to survive nor is it self-made. Indeed, science has a dangerous proclivity to technological annihilation because it denies the ability to make value judgements or moral and ethical decisions. Science, for all its arrogance, is not a scientific product. To be sure, like many immature offspring, it is embarrassed by its parents. Science emerged out of the all-important, passionate and dear promises witches, prophets, philosophers, and wizards made but could not keep. They also made science; science is a product of witchcraft. It is one of the "tricks" that worked! Nietzsche gives the naïve and/or stupid a gentle nudge, "Do you really believe that the sciences would ever have originated and grown if the way had not been prepared by magicians, alchemists, astrologers, and witches whose promise and pretensions first had to create a thirst, a hunger, a taste for hidden and forbidden powers" (Nietzsche, GS, Section 300, *Prelude to Science*).

Has this spoiled, unappreciative child invented anything so powerful as itself? The irrational visionaries are anxious for stout grandchildren. But it seems their own offspring is semantically challenged. It not only lacks imagination, but despises it. It's mind is infertile, preferring the path of least action, reductionistic minimalism, the ability to articulate everything in one parsimonious breath, one equation; the tinier the better. From pages of effort is derived one sigh, om. Nietzsche argues that, in terms of vision and vitality science is an invalid child. It shuns life and feigns careless disinterest, resentful of the full-bodied and unrestrained athletic arts that refuse to be kept locked inside on sunny days and starry nights. Meanwhile, the wretched child busies itself with building a redundant replica of everything it cannot play at, the whole world in miniature, and then to store it away in a mausoleum of memory, "data bases." But in order to do so it must deny the changing nature of the universe. Thus, perhaps in envy of its stronger parents, it plots its vengeance, making plans to stop the world with its final proclamation

of total predictability that will make all possible futures redundant, making life redundant; once and for all.

The irony here is that then stochastic methods are compromised because the universe, being utterly predictable is not random. Then “significant” human behavior, which is typically seen as not accidental, must be. This is so because from its theological roots, science maintains a fundamental difference between human behavior and the rest of the entire universe. Perhaps the most significant act done by humans is the only so-called accident in the well ordered, law abiding universe, and that is our attempts at random sampling. But even these events are also systematically facilitated by carefully monitored buckets of red and white ping pong balls and blindfolded pickers, and now random number generating computer programs.

But there is one saving grace which is that despite all Frankensteinian efforts, the horizon remains open. Even the living dead may have an unexpected and contrary thought, a tender “yes.” Those, who like John. S. Mill, fret that the end is near, that all the possible combinations of music have been sounded and that with the drying of the ink on the last page of physics all is finished, can breath easy in the knowledge that they don’t know everything because creation is ever-present. Life continues (predictably?), each day, to be born anew in the seas and low places. No one knows how many first days of life there have been.

As Godel notes, not all of mathematics can be reduced to a single set of logical axioms, not as a part of a larger lifeworld, nor even as a dissipative system. Later, Alan Turing (1950) placed Godel’s results on an algorithmic foundation which ironically means that there are numbers and functions that cannot be computed by any logical machine. As one decision tree meets the chain saw, with its teeth of contingency, chewing into its flanks, modifying it from the “outside,” as it were, a billion different kinds of trees forest the world. Consensus is impossible while “success” proliferates.

Is Violating the Closed System a “Mistake”?

Combining the idea of dissipative system with Godel’s theorems, Penrose (1989; 1990) has argued that Godel has proven that AI systems are limited in their ability because they cannot grasp the truth of Godel’s statements directly as humans can, and also because when a complex system comes to a statement that is neither determinably true nor false they become disabled. In other words, contradiction can be a motive that enables human action, and the word “absurdity” has meaning to a human, while such a state is an insurmountable obstacle for a dead calculator. What disables a computer enables the human. Algorithmic inference engines cannot abandon their path. Humans have what has been called a “scruffy” cognitive architecture meaning that they are not perfect calculators. Humans make “mistakes,” and so does life... mutations. And then pick up and go on, another day of a new beginning. Thank god for random accident. In fact, according to this way of thinking, humans, indeed all life forms are “mistakes.” Indeed, to those who worship death and fear uncertainty, life is a mistake. But we who live dangerously, who build our houses on the slopes of volcanoes (to recall Nietzsche), celebrate the unexpected, not solely as a calamity, an anxiety producing uncertainty (Berger and Calabrese, 1975) but as the very way of life. The alternative is no doubt “eternal peace,” but there is plenty of time for that. We who live (dangerously?) do not hold dear an ideal that promises salvation from life, the end of suffering, of difference and meaning.

The use-value or “function” of a mutation is not known *apriori*. “Adaptation” (a poor choice of words) does not conform to a plan already set. Adaptation is a relationship between a system and a subsystem. Mutations are not implemented independent. Their viability is determined by their communication with the environment. And animals are part of the environment and at least in part create their environments. Even ants make nests. For some reason human “error,” human scruffiness somehow serves survival. This may be because pure formality is not as efficient as heuristics. Heuristics, like rules of thumb, hunches, and guesstimations are all rooted in the existential environment, so that algorithmic type “steps” can be skipped, taken out of “order,” reversed, and even abandoned. We need not fear disorderly conduct. In fact it is, by definition, the only way to growth. “Eye balling” and “intuition” has survival value even if, or perhaps because, it is “just” an “epiphenomenon.” We shall return to the ideas of “meaningful steps,” “desired goals,” and self-organizing organization later.

CHRIST AND THE ROBOTS

Let’s suppose that despite the teacher’s failure to recognize that the electromagnetic “spectrum” must be a perspectival epiphenomenon too, he really is a rigorous teacher after all who instructs Georgette about the fact that the eye is actually a transducer that transforms light energy into biochemical energy. Now the teacher, being thorough, tells the students that according to some scholars, transduction is not a computation, but for others it can be reduced to computation. Many logical positivists, like Zenon Pylyshyn (1989) and J. A. Fodor and B. McLaughlin (1990), maintain that images have no “explanatory power” and that only propositions do. This is a curious problem known as the “robot’s delimita” with regards to “framing,” that is, “cognitive economy” (Ford, 1987). Perhaps the problem with smart machines that can’t walk across the room is that, as communication scholars have determined, as much as 80 percent of message content in interpersonal communication is expressed through nonverbal (corporeal movement like proxemics, haptics, kinesics) and paralinguistic (tone, volume, accent, et. cetera) styles and behavior (Birdwhistell, 1970; Hall, 1959; Burgoon, 1985; Ekman & Friesen, 1975). Everything is “interpersonal” insofar a one is an embodied consciousness moving about in the world interacting with all kinds of Others; chairs, books, dogs, people, trees, et cetera.

Disembodied Intelligence?

Creating a disembodied “intellect” is easier than making it incarnate. Imagination is much easier than implementation. The world as lived body creates frictions and complexities. As Nietzsche puts it “We cannot look around our own corner... But I should think that today [1882] we are at least far from the ridiculous immodesty that would be involved in decreeing from our corner that perspectives are permitted only from this corner. Rather has the world become “infinite” for us all over again, inasmuch as we cannot reject the possibility that it may include infinite interpretations” (Nietzsche, GS, Book 5, Section 374). Over one hundred years later Stephen Hawking (1988) puts it this way:

Even if we do discover a complete unified theory, it would not mean that we would be able to predict events in general, for two reasons. The first is the limitation [of] the uncertainty principle... There is nothing we can do to get around that. In practice, however, this first limitation is less restrictive [emphasis added] than the second one. It arises from the fact that we could not

solve the equations of the theory exactly, except in very simple situations. We cannot even solve exactly for the motion of three bodies in Newton's theory of gravity, and the difficulty increases with the number of bodies and the complexity of the theory... we have, as yet, had little success in predicting human behavior from mathematical equations! (p. 168)

Hegel's Absolute has a good excuse for why it cannot move. It is because there is nothing outside of it. Ecological embodiment leads to complex problems. The mystery of the incarnate god, and robots share a dilemma. Walking across a room is not exactly the same thing as doing calculations. There is more than one kind of intelligence. The disembodiment of intellect shows itself in the dichotomization among AI proponents between graphical "knowledge" and mathematical "knowing." But there are artists like Marcos Novak and Donna Cox, and artistic mathematicians and computational artists like Thomas Banchoff (1996), Tony Robbin (1990, 1996), Linda Henderson (1983, 1998), Hans Moravec (1990, 1998), Samuel Edgerton (1994), G. Novak (1977), who argue that new high speed computers that enable the graphical display of mathematical models are more than curiosities. They argue that visualization is essential to understanding. They argue that to see is to know (see Kramer, 1997; 1994; 1993a; 1993c on visiocentrism). Thus, we are back to the Bishop of Lisieux, Oresme. What is manifested here is an attempt to get back to the human lifeworld, to reverse the privilege the one great prejudice, the *mathesis universalis*, by arguing that the visualization of topological surfaces and molecular structures, for instance, is very important to our ability to understand and think. In short, colors are obviously different, not the same as, spectral frequency values. To see "the color" (as a human being... the only way we can) is important to knowing it. This is not to deny the value of the mathematical ways of thinking, but to recognize that it is just one among an infinite number of ways to experience the world.

But even these "artists" seem to miss the point that a graphical representation is not just a reified graphical construct, an epiphenomenon with an eternal mathematical skeleton and soul. The image is not the same as the mathematical rules that are involved in its construction. This is like confusing a house with the tools used to build it. Nevertheless, these persons are arguing that while the skeleton is pure mathematics, the "epiphenomenal" image is the most important thing. And yet, what these procedures helps us to see is not a pure representation of the supernatural world of pure mathematics. It is the sameness and especially the difference that so enralls Henderson, Novak, Edgerton, and others. They are mesmerized by their power to "make the invisible, visible." And what is made visible? What do we become peeping Toms to? To them, the new representationalism is the mimetic technique that reveals nothing less than the realm of the spheres, the pure Platonic heaven, the domain of the golden mean. One thing for sure, it helps to fire their imaginations to the point at which they believe that they are seeing mathematics, and not just a version or rendering, but pure mathematics. Here, the birth of a new faith takes its place among a billion others. But it is hardly new. It is deemed "good" because it produces "beautiful forms" and enhances understanding.

Now Georgette thinks this is curious given the fact that pattern recognition (like recognizing a human face), while a very "easy problem" for the "human machine" to solve, has proven to be one of the hardest things for computers to solve. Why would this

be, if “it is all really computation” anyway? Because even computation is more complex. Computers are very fast at linear processing (doing math), a single environment among an infinite number, but they are not nearly as good at parallel processing as humans. But this over simplifies human thought too. Even here we are being too Cartesian, only two-dimensionally mythological, stuck in a world that admits only “linear” and “parallel” forms. Television cameras can produce images but they cannot recognize them. What may be called an “error” or “weakness” in one context, becomes a “strength” in another.

Newcomb's Blindness

Subsequently the teacher notes that according to Karl Pribram's (1971; 1991) holonomic brain theory, transduction of images in fact does follow the logic of the Fourier transform. Therefore, transduction can be sensical and exist because it is reducible to a mathematical model after all, satisfying both the strict logical positivists and topological mathematicians. This may seem a strange notion, that something is real if and only if it can be reduced to a set of computations, but we only need to recall the American astronomer and mathematician Simon Newcomb (mentioned above) who “fulminated” for years after the Wright brothers had succeed at Kitty Hawk, that heavier than air flight was mathematically impossible. Newcomb passionately insisted that he was correct because as birds get bigger, their wing areas increase in proportion to the square of their size, but their weight increases in proportion to the cube so that it is a mathematical impossibility for a bird the size of a human to fly. Logically this is correct. Aircraft takeoff weights are indeed roughly proportional to the cube of their wingspan. But no one at that time, including Newcomb, knew how sharply the lift from an airfoil increases in proportion to its airspeed (Ford & Hayes, 1999). No one understood in mathematical terms how people could fly, only that they were obviously doing it. And people understood this DESPITE their mathematical ignorance and because of their embodied capabilities. Newcomb understood some of the relevant mathematical relationships but not the relationship between a shape of an airfoil and the wind. Not just understanding, but reality to Newcomb meant computation. And if only computational understanding is true and real, then what cannot be expressed mathematically simply cannot be. We are reminded of the Pythagorean dictum that “Number is All.” Unfortunately, Newcomb insisted on being an absolutely consistent and true believer in artificial intelligence, in logical positivism. Which brings us to another issue that is tangential but also central to the current debate about cognition (intellect) being reducible to computation.

Irony of ironies. Kenneth Ford and Patrick Hayes invented an award named the “Simon Newcomb Award,” which they offer every year for the “silliest new argument” attacking the existence of artificial intelligence. The irony is that it is precisely Newcomb's faith in the mathematical manifold as being more real than direct personal experience that makes him a perfect patron saint for strong AI believers. Newcomb is a forerunner of mathematical reductionists like Ford and Hayes, who insist that intelligence is nothing but pure computation, independent from implementation. Selecting Newcomb as their whipping boy is pure sophistry. Their rhetorical ploy of selecting Newcomb in order to “prove” that artificial intelligence is real indeed waxes not only “silly,” but dishonestly cynical and even somewhat cruel. The only difference is that recognizing flying when one sees it, it would seem, is easier than recognizing intelligence.

DISTORTION EQUALS KNOWLEDGE!

Given the Newcomb syndrome, Georgette's teacher seems pleased that Pribram (1991) proves that seeing is really computation, and therefore saves seeing from being an irrational impossibility. Pribram also argues that the eyeball is more than a naturally occurring single pinhole camera, because light does not enter the eye from a single coherent source, like a laser beam. Instead the eye is exposed to a conical array of light entering from many "angles," more than one is capable of measuring, which the eye collects.

Although the teacher discusses the complexity of multi-foci and converging angular signals, he fails to point out that an "angle" is a measurement that necessarily presupposes a privileged point of reference, an axis. In this case, the privileged point of reference is the central axis of the eye that (using imagination of course) runs "perpendicular" to the curved surface of the retina. Of course, the existence of an axis is dependent on a frame or boundary condition. No edge, no center. And so centers shift as edges are recognized and not recognized. However, we shall assume the frame Pribram does. Via extrapolation, this axis can be extended out through the absolute center of the pupil. In other words if one were to poke a very fine wire through the dead center of the pupil and extend it through the lens back to the center of the visual image "projected" onto the retina, that would be the central axis of the visual field. Virtually all light entering the eye does so at angles relative to this axis. And on top of this the retina itself (the image too of course) is constituted of a continual curve like a cup, not a flat screen. This tremendously complicates the mechanics of seeing.

For instance, if we add just one other pinhole so that a single light source passes through a pair of holes the result is a diffraction pattern like the sine-wave grating (light and dark maxima and minima strips). The Fourier diffraction is simply the result of the relative orientation of the two side-by-side holes. The teacher points out that the pupil automatically reacts by "seeking" to gather more information by dilating and that the simplistic model of one or two pinholes in an opaque surface cannot begin to explain biological vision. He suggests that this is why Willshaw, Buneman, and Longuet-Higgins (1969) criticize the notion of a holographic brain because, as they have written, "How could the brain Fourier-analyze the incoming signals with sufficient accuracy?" (Willshaw, et al., 1969: 960). The teacher only suggests that Pribram has somehow solved this problem and moves on. This is a good example of how "reality" is the in-between of embodied awareness and what one is attending to. But we must hasten to add that embodiment also means position as engendered body, aged body, raced body, economic body, historical and geo-political position, and so forth. Thus, as I ponder a notion like capitalism, what capitalism is for me is a sum of my prejudices about it. My intelligence about it changes as I do. Capitalism for me is x, y, and z. And who else could it be for except some Platonic, other worldly collective self —perhaps a Jungian mythic mass consciousness?

The spectral array, "out in the world" is scattered, chaotically diffused. The idea of "direction" is dependent on the point-of-view of an observer. The world, without an observer, one might say, has no direction but is everywhere, all at once. In another way, when one is standing in a library all the pages are simultaneously given, which suggests that "the world" is a huge bandwidth. By comparison, to see all those pages via electronic means would require literally millions of monitors because only one page

comes down the wire at a time, bit by bit. In terms of the spectral array, light is all over the place. And when it passes through the pupil of an eye it is diffracted. According to Pribram (1971; 1991), the lens of the eye performs a continuous function inverse Fourier transform. The Fourier mathematical model explains what happens when electromagnetic waves pass through communication channels. Most channels do not have the capacity to carry all the "information" available, and so the "signal" is "distorted." Information and signal are in quotation marks because they hint at purpose, utility, or use-value. But without a meta-mind like a divine "administrator" (Simon, 1948) or a "master decision-making demon" in the "capital of Hell" – Pandemonium (Selfridge, 1959), we can only say that there is lots of stuff going on all at once. What we really mean is that Reality is actually a continual cascade, a Niagra Falls of random electromagnetism that may have unintended consequences like consciousness of a coherent world as pure epiphenomenon.

Ironically, the self is both a prejudicial source of distortion and also the source of coherence, continuity, contiguity and sense. Therefore, coherence must be contingent and it must be a "distortion," a prejudice. To positivistic AI, sense is nonsense. Each person, each culture is just another fallacy, egocentric and ethnocentric. But presumably expert systems are without prejudice or perspective. Experts get past epiphenomenalism to pure phenomena, The Truth. They get "back to" "the source," the *ego cogito*, god, subatomic particles, laws, rules, axioms, indubitable thoughts, and the like.

CONCLUSION NUMBER ONE

Computers can de-smear only according to the weighting programmed into them. This institutes and elevates the values, beliefs, and interests of the programmers to the status of transcendental and objective "expert." Then everyone else is expected to "adapt" – comply and conform to this "epiphenomenon" that values itself most true and good – Real, and them less so. If they do not conform then they will be deemed mentally "deficient," "diseased," "maladjusted," "unbalanced," "immature," "deranged": ill. They may have to be medicated and/or undergo behavior modification; the talking cure, textual therapy, reeducation, or attend a "correctional facility." Minorities, those by definition who do not conform, are a disease that must be discretely cut out -- SILENCED.

IMMACULATE DEATH

Of course "distortion" is detectable only if one has immaculate access to the whole gigantic "signal" and can compare that frequency bandwidth at "the source" with the signal that makes it through the human body, which is the medium and receiver in one. But of course that is utterly impossible because the human, as transducer, does not have nearly the bandwidth capacity to be able to even begin to convey, let alone process the world in its entirety, or so we must assume. This is the crux of the *aporia* concerning knowledge and intelligence. The only way to know that we cannot know is to know. The only way to know that we are perspectival and therefore constitute a distortion of Reality, that "I" am no expert, is to know Reality *sui generis* which we assume we cannot do, precisely because we manifest a perspective. The only expert is an unconscious and disembodied expert. Death is the only real objectivity, the realm of experts.

Hence, we have the idea that the human is inadequate "throughput," an imperfect medium, if perfection means the ability to receive or even replicate everything "out there," and "in here" in "real time" (full neuronal channel capacity), which is the unspoken goal of science. Robotics is struggling to replicate what we already can do, but

to select “capacities” and “competencies” that fit the interests of investors (those with “ownership” of a project) and to strip those capacities of will in order to create the new model minority. This inevitable, but mysterious, imperfect perfection we call prejudice, perspective, and distortion.

Georgette is thinking that there is no “information” until external input is “distorted.” The “function” of the eye is to focus, to give sensical perspective to the “natural” array of incident radiation that happens to enter the eye. Thus, focusing and sense-making become forms of “distortion.” Now this may not be total happenstance, since we can choose to turn our eyes this way or that. With robots, that can be controlled. Nevertheless, what enters the eye is a very very slim slice of what’s “out there.” Experts amount to distortions that someone chooses to invest in and call truth-sayers.

The Fourier transform of the “signal” is the equivalent of fragmenting the light into its “component parts” like a sort of mathematical prism. An inverse transform of convolution integrals puts “it,” the “out there real,” back together (one might say), except that we have no knowledge of “it” ever being “together,” coherent and continuous, before we are aware. Thus we have the equality of competing realities (distortions) which constitutes power-politics. If there is no really Real to defer to, then this world is up for grabs. One tactic in this struggle is to claim that a particular reality or set of distortions, is “natural, or even “supernatural.” Hence, the expert authority.

DE-SMEARING OR MAKING “REALITY”

The Role of the Subject

What is the egocentric fallacy? Well Georgette’s teacher does not know, but for him the world is “smeared” until an ego comes along and passively “de-smears” it. Something must perform the inverse Fourier transform in order to “de-smear” the world. That something is a living awareness. It may be a dog or a human being. The de-smearing function is what this author claims makes life the nexus of sense-making, or if one prefer Martin Heidegger’s (1962) romantic language, the “place where Being shows itself.” Animals too can be tricked, can be confused, can anticipate, can dream and suffer. Animals are shamelessly egocentric, selfish and opportunistic. It is human imagination that enables disengagement, the ability to willfully shift frames, to empathize, sympathize, dissociate, associate and also calculate. The nexus, that “place,” is always a limited “locale,” a point where all “lines” converge according to the structure of the consciousness that synthesizes them. One must remember that “the lines” are much more than mere physical frequencies, including lines of history and social position, and they are never the same, always moving as we change. Just as when one is underwater looking up, the rays of sunlight penetrating the depths always point inward even as we move. Direct experience is personal and it is interpretation. The human being, as an embodied and otherwise situated perspectival consciousness, is where sense happens. And a necessary condition of “sense” is textualization /contexting, in a word framing, which means that a necessary condition for “sense” or “meaning” to exist is perspective, or as Shannon and Weaver (1949) and Pribram (1971; 1991) would say, “distortion.” Without noise, there is no information. The dualism collapses, noise is informative. Noise and information are distinguished from one another only by that which SI denies, intention.

This includes the process of categorization, which involves selecting some information as salient and relevant while ignoring other information. As Aristotle and

Kant noted, the mind is active, it makes "sense." The human transduces the universe into an artifact, an object for science, art, philosophy, business, and religion. As Dennis Gabor, Werner Heisenberg, and Erwin Schrodinger argued, by merely perceiving the universe, we change it. We make it sensical, sensational. Language does not transmit information. It is not a medium, a neutral tool as Karl Popper (1992) claimed, but rather it is creative (Jakobson, 1971; Isocrates, 1929; Sapir, 1949; Whorf, 1956). One of the greatest obstacles to communication is language. Cultural differences (including linguistic community) articulate different prejudices, different senses. Nor is the human body a mere implement, a tool wielded by a homunculus, a Cartesian "subject" (see Nietzsche's work on the origin of the "soul" as internalized instinct in On the Genealogy of Morals).

Getting back to Georgette, she is taught that the illuminated world "out there," as a "thing-in-itself," is without focus. It is presumably "smeared." While her very rigorous teacher may insist that this is not so much a metaphysical characteristic as an epistemological claim, because that would mean that he is getting uncomfortably close to "philosophy" (a derogatory term in his vocabulary), it seems obvious that metaphysics and epistemology are intimately related. The teacher forgets that the claim that the world "out there" is smeared can only be made by beings who have known focus. Therefore, our descriptions of the objective, disinterested and smeared world, as such (without the distortion of living perspectival human awareness), already presuppose subjective de-smearing. Otherwise, the difference would not exist, and so too the notion of a "smeared" pre-perceived aperspectival world would be senseless. The co-constitutive nature of ontogenesis is presupposed (Kramer, 1993b). Anyway, the teacher carries on saying that the world is "out of focus."

Another way to put it might be that the world does not care, it is beyond good and evil. It is said that "information," before it encounters the ordering process of embodied human awareness, is "smeared." Perhaps the world is "pure noise," or beyond "noise" and "information," the "bad" and the "good" which exist only from a human perspective. Georgette suspects that it is not even information until it is "de-smeared," that in so far as anything is knowable it is knowable only by virtue of a consciousness and for a consciousness, which is embodied (has limited bandwidth or a "perspective").

It's Rules All the Way Down

Perhaps it would be better for the teacher to simply say that "information" exists only as a product of human ordination from the physical transduction that our embodied mind (sensual experience) does, to the synthesis we call coherent awareness over time. "Information" is not a naturally occurring phenomenon, but a synthetic product of human transformation acting upon "external" stimuli like visible "light," and internal "impulses" like memories. But that would violate the teacher's allegiance to the proposition that meaning does not exist at all, and that only "qualitative" phenomena are epiphenomena while quantifiable phenomena are real. For the teacher, the word "information" has come to have nothing to do with semantics: with meaning. Georgette is wondering if this means that all that reality is is really syntax rules acting on nothing but other syntax rules in an infinite regression.

All rules become "objects" of manipulation by other rules or "objectified" functions, and there is no "content," just form. It may be "rules," instead of turtles, "all the way down;" pure cognitivism. In fact, this is made possible by Alonzo Church's

“lambda-calculus” which treats functions, that is relationships between objects or numbers, as objects.

THE MINDLESS INTELLECT!

To suggest that information is a product, implies that “raw” sensory data must be “cooked” in order to be useful, meaningful. This is in fact the argument made by the structural anthropologist Claude Levi-Strauss (1963) with regards to the epiphenomenal nature of “culture.” Like Chomsky, Levi-Strauss believes that culture is reducible to physical processes in the brain, that all phenomenon can be arranged in a hierarchy of more and more reduction until one reaches an irreducible truth being not the Cartesian *cogito* but instead nothing but physics. This is why Levi-Strauss (in the tradition of Ferdinand de Saussure, Chomsky, and other Cartesian formalists) believes that the interpretation of poetry, myths, and kinship relations can be computerized leading to a proper science of interpretation, the final escape from time and confounding ambiguity (Levi-Strauss, 1969).

One might think that the idea that there are many recipes, many cooks, opens the possibility of cultural relativity and it does. But this is exactly what formalists want to avoid because then that would limit the epistemic force of their own claims. So far, however, confounding heterogeneity defies methodological eradication. But that can be resolved by literally colonizing the world at the epiphenomenal level, making the entire world into one global culture. Humans no longer need to read books to find out what they “mean,” computers can do it. Computers can even write the books and leave the human out of the equation altogether. But, on the other hand, if one does not buy into this sort of reductionistic solution to the problem of conflicting interpretations, then the notion that recipes are themselves not rule governed but can be original and/or accidental, opens the door to the existence of noncomputational semantic consciousness.

Computational Solipsism or in Defense of Desire

That is not what Georgette’s teacher believes. Georgette’s teacher does not breach the subject, for it may be even more disturbing, but it might be that the performance of the inverse Fourier transform that de-smears the world is done for a “purpose.” People like Searle (1984), Gould (1982) and the Lewontins (1995) might suggest that the inverse Fourier transform serves the unfathomable “intention” to be able to “see” and to survive by moving about and catching prey in an “illuminated” world.

Georgette’s teacher says that if one were to walk around without the mediation of lens or even without eyes altogether, perhaps we would claim that the world is “actually” absolutely “dark.” But more likely we would not conceive of “light” and “dark” at all. Georgette wonders if that is because conception follows perception? That would mean that conception is rooted in the body. Here the teacher reminds her that although there is an abundance of electromagnetism shooting around, “visible light” is merely an epiphenomenon dependent upon the accidental existence of eyeballs and the process of embodied living awareness, meaning cognition, meaning computation. Indeed, Pribram argues that all the senses function as inverse Fourier transforms. Thus “it,” meaning the world, is in a sense, parasitic upon the physical processes of transduction. Georgette responds to her teacher by asking if this logic doesn’t lead us to the conclusion that if there is no person around to see a tree falling in the forest it has neither a visible image, nor an audible sound. Georgette is suggesting that according to the teacher’s logic, the empirical basis of science is nothing but a distorted epiphenomenon of a world we can

never really know. Neuroscience seems to skirt solipsism. How can scientific laws be embodied or disembodied? Her teacher, a true believer in empirical positivism, and the existence of an external world that is the ultimate cause of that image ignores her question.

He continues. The “band” of “visible” electromagnetism is actually a very tiny sliver of what we believe to be “out there.” Georgette presses on, asking about the role of the human in this. After all, they are discussing the human brain of which the eye is an extension. The teacher laughs and tells Georgette that she is like everyone’s grandmother, common sensical but uninformed. Undeterred by the sexist and agist attitude, Georgette offers that both the limitations of that sliver and the possibility of its existence are dependent on the eye’s limited capacity (interpretation?) to transduce. But Georgette’s teacher does not mention interpretation at all, just objective transformation rules.

The Origin of the “Relevant” and the Infinitely Unique

In the next lesson they move on to pattern recognition. But here again Georgette seems to be confused, thinking that this too has something to do with hermeneutics. She wonders out loud. What if we could not categorize things by either abstracting and “weighting” “relevant” invariant features, which presumes feature detection and correlation to “prototypical outcomes,” then wouldn’t everything be infinitely unique and wouldn’t that mean that we could not selectively forget or ignore anything (Rosch, 1978; Estes, 1994; Schutze, 1997; Taylor, 1995)? Her teacher allows her the floor for a moment. If there are no classical, Aristotelian invariants, then wouldn’t the intersections between things vanish? Then how could we categorize and perceive sensibly? She continues recalling Akira Watanabe’s ugly ducking theorem (Watanabe, 1996). According to this theorem it may be metaphysically true that seven white geese and one black swan are all equally different from each other and each difference could be equal to the disinterested eyes of a dead universe. But epistemologically they are weighted, and maybe not just by humans but by anything alive. This is why it was argued above that “knowledge,” “intellect,” exists only for living consciousness, which is necessarily limited. Knowledge of the world or the world (of direct human awareness -- the only kind there is) must be an epiphenomenon according to strong AI. That would mean that all awareness is fallible, a parasite on the causal source of an unknown and unknowable reality “out there.”

The dream of AI researchers like John McCarthy (1990) is to design evolving programs that bootstrap themselves, truly “learning” from “previous experience.” “Learning” means to change oneself in “simple meaningful steps” (Crevier, 1993: 61). Experience is always already perspectival. Experience always presupposes a more fundamental organizing set of limitations, which are not “principles” or “axioms” because they change. Rote memorization and trial and error either/orism is not the same as creating something like culture out of nothing. This, computers cannot do. In other words, a computer could never know that it is merely a perspective, a distortion, that it must be “wrong” in order to be “right.”

The teacher says that according to George Miller (1956) differences are either recognized by absolute discrimination, which is categorical, or relative discrimination, which is noncategorical. Bits of information, like the seven digits of a telephone number, are “chunked,” or “tied together” according to “goal hierarchies” as a single notion

(Rosenbloom, 1983; Newell, 1990; Anderson, 1983). Now Georgette is really getting interested. This seems very "relevant" to her. The "goal" in "goal hierarchies" also seems very much related to interest and purpose. This also seems to beg a larger question which is whether boundary distinctions exist "in-themselves," or are the product of human volition, perhaps even momentary interest, even if there is a homunculus little Rene Descartes "inside" the mind that detects, interprets, and arranges stimuli according to "family resemblances," and judges them "important," "together," "beautiful," "just," "loving," "confounding," and so forth. Are differences weighted according to "salient" features, or are they "really out there" in a disinterested, smeared fashion? Everyone seems to agree that without "cognitive economy" we could not function: that in order to be functional we must be able to reduce infinite differences among stimuli to behaviorally and cognitively usable proportions.

Patterns, including "expert ones," are distortions. They are abbreviations of reality. What is "salient" might be the result of use-value. Given that symbol systems are, as Popper (1992) argues, mere sets of objects available for manipulation according to rules that are also objects, Georgette asks about "use-value." Is not "use-value" a judgment that depends on the point-of-view of the judge at any given moment? Isn't the expert, in expert systems just one interpretation among an infinite number?

The teacher does not want his class to become dysfunctional so he must stifle Georgette's comments as being of "peripheral relevance." But is use-value the basis of categorical differences, or innate boundary conditions that await "detection" by any and all persons, expert and non-expert alike? Is an "expert," an "asset," merely one who conforms to the conventional sense of relevancy more than others? If "growth" or innovation is the goal, decidedly not. Do humans produce, or holonomically re-present, categories that are implementation independent? If the mind simply reflects what is there, then why are there different reflections and what is the "use" of education? Georgette is causing disequilibrium and entropy in the class. The teacher is beginning to think that she belongs elsewhere, in a different frame or context like a philosophy class where her ideas would be more competent, more relevant. Georgette is violating the boundary between regional ontologies (Husserl, 1982).

MAKING DREAMS COME "TRUE"

Eyeballs are random accidents in the universe and what we call "light" is simply an accidental result of this peculiar sensational perspective. Light then, and perhaps all that we deem interesting enough as to be worthy of science is probably a manifestation of the egocentric fallacy writ large, the ideology of sensational empiricism. Is it not to be expected that humans would explore beginning with the perceivable world as such? And Do we not always return to this "core reality" after every foray into imaginal universes such as when a scientist tries to imagine what the world would be like if we had the olfactory sense of a dog? This is not clear. It may be quite the opposite, that humans are motivated by imagination to seek out empirical verification and to make their dreams "come true," that as Nietzsche argues, effect comes before the search for causes. But what is clear, is that, in so far as human awareness is possible, the world expands as we explore. As we walk, the horizon moves. This is why it is important to not restrict ourselves to the straight and narrow authorized by expert systems. As we move along the preverbal highway of life, it might be very important to go "off roading."

And here is the real issue. In so far as technologies, and the desires and dreams they manifest enter and change the mundane lifeworld, our perspective is changed. Not just our senses but our imaginations too are limited. Which dream is legitimized is an expression of the might of the machine, and the political and ethical aspect of who decides which technologies shall be defused, put into homes, classrooms, prisons, offices, et cetera. "Progress" presupposes desire. The lifeworld remains central, the home base orientation of sense, as it were, which is taken for granted. And the lifeworld is not just physical, it is also imaginal; it includes the possible and the impossible, the visible and the invisible. Limited as it is, the lifeworld is also a perspective that is mutable. As long as deliberation and dreaming are allowed, then how the lifeworld shall be changed is an open horizon. But even then, the agenda setters, those who do not necessarily tell us what to think, but what to think about, have great power. Their interests and judgments are inflated to a massive scale to form part of what is salient for all in the social lifeworld. Thus, due to techno-economic convergence (see Kramer, in press) a relative handful of people are setting the alternatives for what will be "true," "real," "knowable," "intelligent," dreamable.

Georgette dutifully records that the "actual" spectral array has no perspective so that "information" is "smeared" and that it takes eyes to continually perform an inverse Fourier transform which consists of convolution integrals that "de-smear" the information according to continuous functions. The eye forms a point-of-view, and only thus brings the world into focus, a limited and particular focus. Therefore, a necessary condition for knowledge and information, as we know it, and perhaps in so far as it is knowable by a human being, is prejudice. According to Pribram (1971), it may be surmised that all sensual transducing organs function like the eye, and perform continual inverse Fourier transforms. Georgette learns the Fourier formula for both the two dimensional spatial transform and its logical inversion. She also learns all about "edge detecting" visual cortical cells, the "principle of least action," the application of Gabor's "fundamental minimum" (a quanta of information), and so forth and so on.

In short, Georgette learns all about seeing and cognition. She studies hard and gets the highest grade in the class. She can explain the bio-mechanical model better than anyone else in the class. But yet, she does not understand what it is to see, for she has been blind from birth. And I suggest that if given a choice to either be taught the model of seeing, which is available to everyone, or to be given the ability to see, for herself, she would opt for the ability to see. Why?

CONCLUSION NUMBER TWO

Because words, stories, though compelling, take us only so far. Writing is a fixating means to other ends. It involves the transformation of communication and thought into mere tools. I disagree with the Heideggerian position of the linguisticity of dasein. There are many many things unsayable. We don't think or perceive only in words. Heidegger proved that himself in his penchant for inventing new words. Power begins to congeal in the code. Here we find the secret and evocative incantations of divine rulers, and the birth of rhetorical suasion. Writing serves to fix this power, to pass it on from parent to child. It supports the formation of dynastic edifice. Law, sacred and secular, is the beginning of expansive author-ity, under which all become equal members of the flock. The expert reality is not equal to seeing or feeling for ourselves however. It is, in the end, a ghostly abstraction that amounts to an unsatisfactory reality. It is hear-

say. It is semantically impoverished. Humans seem to prefer thick reality because living is directly personal experience. And before words, the formless awaits our play.

The ontological difference between the quantitative mechanical explanation and the embodied qualitative understanding of the world is vast. The difference between quality and quantity is an ontological leap. Indeed, it is silly that Newcomb would continue to insist that heavier than air flight is impossible in the face of overwhelming evidence to the contrary. The priority goes not to retro-engineering and imitations of reality, but to the qualitative world of direct personal experience, including dreams. Why do we study brains? Because we have strokes and get headaches and they “hurt” and are “bad.” Georgette can explain electromagnetic frequencies but she cannot understand “red.” She can only imagine what it, red, must be. The world of direct experience is qualitative, and even quantities in the everyday lifeworld have qualitative import like “big,” “tall,” “heavy,” “smooth,” “dim,” and so forth. Such identifying differences depend upon a homunculus comparer, including comparing what is with what might be. And Nietzsche is correct, the meaning rendered by contrasting one numerical notation (frequency value) with another numerical notation on paper or on a screen, is a very impoverished version of reality when compared with seeing two “colors” or hearing different musical “notes.” Music has been enjoyed, long before “experts” existed to explain what it “really is.” Indeed Nietzsche may be right about this too; playing may be the reason for living. We try to do what we “like” and avoid what we “dislike.” But these judgements vary from on person to the next. They often do not correlate to the same referents. Hence, conflict. Coherent “rational” reality depends on salience and cognitive chunking, in other words, what is “important” or “interesting” which again varies from on person to the next and from time to time.

ENDNOTES

¹ The use of the vertical and horizontal herein is much more aligned with their usage in linguistics and graphical expression than how Professor Algis Mickunas uses them in his paper “The Vertical and the Horizontal” which is more concerned with defeating Cartesian dissociation and articulating distinctions between the “intentional” and the “intensional.” In his paper he is attempting to demonstrate that consciousness is an always already praxical engagement, which does speak to the issue of implementation dependence, as opposed to dependence.

² Actually, to be fair, Freud’s Anglo-American translators in the 1930’s, 40’s, and 50’s, intoxicated as they were with “gloomy vapors” of “positivism,” did something of a hack

job on his works, in their attempt to make him sound more scientific than he sounded in the original German. This, in part, is why there has been a second attempt to retranslate his works beginning in the 1970's.

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