

**The Techno-Econ-Organism - It's Impact and It's Demise:  
The Birth of the Integral in Society and Education**

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**Introduction**

Here at the end of the first decade of the 21<sup>st</sup> century, we live approximately eight to ten generations into the world of industrial capitalism. Though it has, indeed, brought in its wake what many would call comforts and luxuries, industrialism has also wreaked havoc on the biosphere and, I would argue, on our worldview and self-conception. Human beings seem to generally hold the notion that it is our thoughts and behavior that shape culture - *we* are somehow in control of what *we* have created. But, as simple genetic experiments have revealed, environment and selection (natural and unnatural) have the capability of breeding out what may be perceived as *intrinsic* traits of any species of social animal. Dmitri Belyaev's experiments on the domestication of the Russian silver fox are an excellent example. After only ten generations of selecting foxes based on *behavior alone*, Belyaev ended up with a population of foxes who "no longer showed any fear of humans and often wagged their tails and licked their human caretakers to show affection. They also started to have spotted coats, floppy ears, and curled tails." <sup>1</sup> Belyaev showed, moreover, that the resultant change in physiology and tameness was in direct correlation to levels of adrenaline produced in the bloodstream. "This is feasible, because foxes that are not afraid of humans are going to produce less adrenaline around them." (Ibid) Though no proof for this assumption has been exposed, one must wonder what significance to human society (as most scientific research as geared) would this experiment reveal?

As I will attempt to show in this paper, we, as citizens of industrial society, have been bred within a technological/economic system that was born somewhat preternaturally and lives as an autopoietic entity. This soulless organism that we refer to

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<sup>1</sup> [http://en.wikipedia.org/wiki/Dmitri\\_Belyaev](http://en.wikipedia.org/wiki/Dmitri_Belyaev)

as “market society” or “industrial society” (if I may use this analogy) has been conducting a similar experiment upon humanity, which many among us are ultimately waking up to.

Through Karl Polanyi’s examination of the birth and rise of industrial society out of “primitive” market systems and Lewis Mumford’s and Jaques Ellul’s observations regarding the rise and effect of *Technics*, one might trace the cultural invention of a system bent upon breeding a race of mammals that would be best suited to serve its (the system’s) needs. The question is, what kind of race would that be? What would be its primary traits? How would it behave? What would be the impact upon future generations? And how might this race finally extract itself from its symbiotic relationship with the organism?

### **The rise of the market and the decline of intrinsic value**

Through extensive research into anthropological studies of “primitive” markets and economics, Polanyi shows that a human’s economy is “submerged in his social relationships. (Humankind) does not act so as to safeguard his individual interest in the possession of material goods; he acts so as to safeguard his social standing, his social claims, his social assets. He values material goods only in so far as they serve this end.” (Polanyi, 2001, pg.48) The markets, throughout most of history, were mechanisms designed to provide societies with the necessities and comforts of daily living. They functioned under strict guidelines that were put in place to ensure the sanctity and purity of an environment increasingly reliant upon the cooperation and creativity of its occupants. They followed basic principles of *reciprocity and redistribution*, in the service of *symmetry and centration*. There was no motive for personal gain only the

desire to efficiently allocate goods and services in the hopes of equal and peaceful relations amongst the population and their neighbors. This is certainly not attempting to imply that there were not acts of aggression and power involving the hoarding of goods by those in military control; but the *market itself* was not the mechanism through which this power was obtained.

Even as trade grew out of specific locality and incorporated foreign exchange and the import of goods from different climatic regions it remained complementary and non-competitive. Only *internal trade* was inherently competitive as “it includes a very large number of exchanges in which similar goods from different sources are offered in competition with one another.” (Polanyi, 2001, pg. 63) This is not to be confused, however, with *local markets* which, even today, still function on principles of reciprocity and redistribution.<sup>2</sup> Polanyi, through a meticulous tracing of the regulations of local and long-distance trade in Europe during the rise of mercantilism, illustrates that internal trade was a construction of the state. Without going into great detail regarding Polanyi’s argument, it is important to understand that by breaking down the barriers between towns and countryside, towns and provinces, and eventually continent and continent some principle of unification was necessary – “the instrument of unification was capital, i.e. private resources available in form of money hoards and thus peculiarly suitable for the development of commerce.” (Polanyi, 2001, pg. 69) This was, however, not the turning point in the evolution of the self-regulating market, as it is evident that as national markets grew so, also, did regulation over those markets. It was not until the bizarre

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<sup>2</sup> Local farmer’s markets are excellent examples of urban centers of exchange where goods and services are redistributed equitably from different areas of the state.

notion of controlling market systems through *prices* that one witnesses the inversion of society's relationship to the market.

In order to move from the state regulated market to a self-regulating market three assumptions needed to be in place: 1) humans behave in such a way as to maximize monetary gains, 2) supply of goods at a price = demand at that price, and 3) there is a presence of money providing purchasing power. Polanyi goes on to say that, "Self-regulation implies that all production is for sale on the market and that all incomes derive from such sales. Accordingly, there are markets for all elements of industry, not only for goods (always including services) but also for labor, land, and money, their prices being called respectively commodity prices, wages, rent, and interest." (Polanyi, 2001, pg. 72) Polanyi refers to this concept as *commodity fiction*. Since commodities are defined as objects produced for sale on markets, it is fairly obvious that labor (human beings), land (nature), and money (tokens of purchasing power) are *not* commodities. Thus, the move from state regulated markets to a self-regulating market further objectified both humankind and its environment, and in the process, abstracted any remaining sense of intrinsic value placing it outside of the individual into tokens of wealth. According to Polanyi, "In disposing of a man's labor power...

...the system would, incidentally, dispose of the physical, psychological, and moral entity 'man' attached to that tag. Robbed of the protective covering of cultural institutions, human beings would perish from the effects of social exposure; they would die as the victims of acute social dislocation through vice, perversion, crime and starvation. Nature would be reduced to its elements, neighborhoods and landscapes defiled, rivers polluted, military safety jeopardized, the power to produce food and raw materials destroyed." (Polanyi, 2001, pg. 76)

Important to keep in mind is that we can trace the line of thinking to no particular individual or group; one can only ascribe "blame" to the *dues ex machina* of the system

itself. So, with the dawning of free market society humans have been tagged with a value; not a value based on who one is or even what one does, but a value based upon how much one is worth in regards to the perpetuation and growth of the market itself. It is the market that determines one's value. With this in mind we can return to the earlier question: What kind of race is being bred from within this system? Since, as Polanyi puts it, the commodity fiction is the "principle according to which no arrangement or behavior should be allowed to exist that might prevent the actual functioning of the market mechanism", the system may be breeding a race so removed from its natural environment that it no longer sees or cares about the environment's degradation; a race so removed from its sense of purpose that it will be subservient to the will of the system. Hence, the system creates a race of beings that is not only bred specifically to feed the system's hunger for expansion and growth but a race that educates its young for the same purposes.

In order to obtain a deeper understanding of humankind's absorption into the market, I would now like to explore the concurrent and symbiotic emergence of the machine society. For that I will turn to the work of Lewis Mumford and Jaques Ellul.

### **The megamachine and the technological society**

What is the human being's relationship to technology and the machine? I believe that is one of the most profound questions we can ask ourselves at this moment in history. Who is in control of whom? (If I can be so bold as to use a personal pronoun in reference to a system or a machine.) Technology has subsumed human life to such a degree that machine metaphors (especially in relation to artificial intelligence) have become part of

the vernacular of everyday conversation: “My battery is low.” “It felt like I just downloaded the whole thing!” “I need to reboot.” “I don’t have the bandwidth.” “That paradigm has become the Operating System of the whole culture.” And so on. Perhaps the most striking example is from Ray Kurzweil’s book, The Singularity is Near: When Humans Transcend Biology. The book’s main hypothesis is based upon, what he perceives, as the rapid acceleration of technological advancement, especially in the area of Artificial Intelligence. Kurzweil claims that at a certain stage, humans and machines will merge into a singularity, and through this merger (in a kind of perverse twist on Teilhardian thought) the universe will wake up to itself. He says, “In the aftermath of the Singularity, intelligence, derived from its biological origins in human brains and its technological origins in human ingenuity, will begin to saturate the matter and energy in its midst. It will achieve this by reorganizing matter and energy to provide an optimal level of computation ... to spread out from its origin on Earth.” Whether or not his claim has any verity is of little concern in this context.<sup>3</sup> What I find fascinating is the diaphaneity of the boundary between human and machine, and the misperception of the human species as “*homo faber*, the toolmaker, rather than *homo sapiens*, the mind maker.” (Mumford, 1966, pg. 80) Though Kurzweil takes the man-machine paradigm to a rather immoderate conclusion, he is not alone in his sentiments or his worldview. How has the concept of technics gone from an expression of our vast imagination and creativity (as Mumford suggests) to the desire to acquire mastery over nature? How has this “mastery” eventually severed our relation to nature and created subservience to the

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<sup>3</sup> There exist, in fact, so many profoundly grievous epistemological errors in Kurzweil’s statement that it would take a whole book just to unravel the idea of intelligence having its origins in the human brain.

machine itself? Has it become impossible to disengage ourselves sufficiently from technology to realize that “tool technics and our derivative machine technics are but specialized fragments of biotechnics: and by biotechnics one means man’s total equipment for living?” (Mumford, 1966, pg. 79)

Mumford claims, “At its point of origin...technics was related to the whole nature of man. Primitive technics was life-centered, not narrowly work-centered, still less production centered or power centered.” (Mumford, 1966, pg. 81) Humanity’s relationship to technology began to change around five thousand years ago in Egypt with the construction of the great pyramids. In order to construct these breathtaking monoliths, a machine was needed that could manifest both intense precision and incredible horsepower. This machine was made entirely of human parts; Mumford called it the *Megamachine*. The Megamachine characterized a culture “in which work at a single specialized task, segregated from other biological and social activities, not only occupied the entire day but increasingly engrossed the entire lifetime.” (Mumford, 1966, pg. 81) Modern philosophy has habitually blamed René Descartes for the separation of mind and body, human and nature, which has led to so many of the crises we now face as a global community. In reading Mumford, however, I would argue that the “Cartesian worldview”, in many ways, pre-dated Descartes by almost 5000 years.

Simply by the act of employing humankind as “factors” in the construction of massive projects which were so removed from the necessities of daily living, the beginnings of a techno-social psychology were set in motion whose natural omega point could be nothing *but* Cartesian. Humans began to perceive themselves as no more than cogs in the wheels of industry. Their value as thinking, feeling, creative beings was

gradually subsumed by their employment in an infrastructure that was originally designed to serve the greater good – be that God, the city, the state, etc. – but gradually only served the perpetuation of the structure itself. In modern times, even careers assumed to have the greatest integrity (teaching, for example) are merely cleverly cloaked agencies to continue the successful running of the machine. For the new technical milieu, according to Jacques Ellul, has “all its parts ... mutually implicated to such a degree that it is impossible to separate them or to settle any technical problem in isolation.”

I mentioned teaching, in the above paragraph, as an example one such agency. One need only *look* at most modern classrooms to see evidence of a thriving techno-social paradigm: rows of desks facing a podium, textbooks approved by the government, testing in order to rank the population in terms of their worth in the continuance of the machine (be it technology or the market), young people coming and going to the sound of buzzers and bells all doing the same thing at the same time – rote memory exercises in service to better “education”. Humankind is a *problem-solving* species but one need only to take a close look around oneself to see that most, if not all, of our problem solving is simply fixing, technologically, the problems created by technology. Ellul describes it lucidly as follows, “Technique comprises organizational...

...and psychological techniques. It is useless to hope that the use of techniques of organization will succeed in compensating for the effects of techniques in general; or that the use of psycho-sociological techniques will assure mankind ascendancy over the technical phenomenon. In the former case we will doubtless succeed in averting certain technically induced crises, disorders, and serious social disequibrations; but this will but confirm the fact that Technique constitutes a closed circle. In the latter case we will secure human psychic equilibrium in the technological milieu by avoiding the psychobiologic pathology resulting from the individual techniques taken singly and thereby attain a certain happiness. But these results will come about through the *adaptation of human beings*

*to the technical milieu. Psycho-sociological techniques result in the modification of men in order to render them happily subordinate to their new environment, and by no means imply any kind of human domination over Technique.”*

I do not wish to imply that our unconscious submersion in the machine has the potential to turn humanity into a race of automatons, or, as Kurzweil suggests, merge our very biology with that of the machine. I believe that there is far too much evidence to the contrary to support either of those hypotheses. To use an example from art, as Jean Gebser (whom I will turn to in the final section of this paper) did so convincingly in his book, The Ever-Present Origin, the sublimation of humans to the machine has appeared consistently in the science fiction genre from its conception. In modern film the concept found its best expression in Stanley Kubrick’s 2001- A Space Odyssey (actually based upon a short story titled The Sentinel by Arthur C. Clarke written around 1948) and, more recently, The Matrix, by the Wachowski brothers in 1999. Both films are concerned with intelligent machines assuming power and dominion over their human counterparts. Both films portray the human “waking up” to its sublimated position and willfully disengaging from the machine. Both films end with an obvious death/rebirth akin to the mythical hero journeys so beautifully sketched out by Joseph Campbell. There are small pockets of humanity all over the globe that are “waking up” to our current situation – that humanity’s value is (falsely) in direct correlation to its usefulness in keeping the techno-economic organism alive and that, somehow, a new story needs to be told that reinvigorates the human potential. <sup>4</sup>

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<sup>4</sup> See for example: The Philosophy, Cosmology, and Consciousness program at CIIS, The GaiaField Project, IntegralWorld.net, NaturalGenesis.net. This is just a few, but I’m sure that the committed researcher could track down dozens.

What may or may not be obvious at this stage in my paper is the symbiotic nature of the market organism to the techno-organism – that they are irrevocably intertwined; one cannot be tampered with without disturbing the other. Most profound however, is the “neural” connection of our species to the *techno-econ-organism*. One species cannot be examined, anymore, without considering the other. And herein lies the dissonance one feels in grappling with solutions to the problems inherent in the system. Yes, humans *are* waking up to our predicament, but, like a Celtic knot, whenever we follow a thread of logic to create a solution, we either end up lost or back where we started. A perfect example of this is questioning education. We may ask a teacher who is committed to changing the educational paradigm, “What about ditching the 3-R’s as the core of the educational curriculum and replacing it with something else?” The answer would range from, “Oh no, how could they get into college or find a job? (In order to keep the machine functioning.)”, to something more nebulous like, “That sounds great, but how would they learn the basics? (In order to keep the machine functioning.)” We are so intertwined in the machine’s survival that we confuse it with our own. It is a Möbius strip of logic. We want to change the system, but we have to work within the system to change it, therefore the system needs to keep running.

In order to find a framework for an adequate discussion of this matter I would like to turn to the work of Jean Gebser.

### **The Integral Mutation of Consciousness**

As human consciousness evolves from the Deficient Rational into the emergent Integral stage, Gebser notes that angst, anxiety, and feelings of ‘no escape’ will be the symptoms of the Integral irrupting into consciousness. One is reminded of the

characteristics of Stanislav Grof's second perinatal matrix, where the neonate (or adult experiencing a holotropic state) is suffering through the first spasms of birth, some of the experiences being: an unbearable and inescapable situation that will never end; various images of hell; feelings of entrapment and engagement (no exit); agonizing guilt and inferiority feelings; apocalyptic view of the world, dangerous epidemics; meaninglessness and absurdity of existence; "cardboard world" or the atmosphere of artificiality and gadgets, etc.<sup>5</sup> One sees these same sentiments expressed by Lewis Mumford, "We have the misfortune to live under the sign of Caliban...

Hate, fear, suspicion, violence have become almost endemic. In America, abnormality is fast becoming our norm: automatism our overruling providence: irrationality itself the criterion of reason. Fantasies of wholesale extermination and annihilation no longer fill only the minds of certified paranoiacs: their studious translation into the practical devices of atomic, biological, and chemical warfare has dominated the activities of leaders in science and government for more than a decade." (Mumford, *In the Name of Sanity*. 1954, pg.166; from Feuerstein, 1987, pg.127))

For those of us trying to figure out how to address these profound issues (knowing that the Integral is still slightly out of reach and our only tools for thinking about the problem are within the Efficient Rational) there is a sense of frustration, impotence, or surreality. Bob Dylan expressed the confusion and paradox beautifully in Ballad of a

#### Thin Man:

You raise up your head  
And you ask, "Is this where it is?"  
And somebody points to you and says  
"It's his"  
And you say, "What's mine?"  
And somebody else says, "Where what is?"  
And you say, "Oh my God  
Am I here all alone?"

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<sup>5</sup> Adapted from Grof, Stanislav. Psychology of the Future, pg. 35-36, 2000.

Because something is happening here  
But you don't know what it is  
Do you, Mister Jones?  
(Bob Dylan, 1965)

There is one possible method I would like to suggest to employ our efficient rational capabilities in pondering the seemingly impossible loops we are faced with in this post-post-modern age. That method is to shift our attention from the objects themselves to the *relationships* of the objects to one another, or *the space between*. It is clear that *objects*, in the Newtonian sense of the word, have lost some, if not most, of their meaning and significance since the discovery of quantum physics and the theory of relativity at the beginning of the twentieth century. Gebser claims that, “What is gaining importance now is the spiritual light reigning between objects – the tension and the relation between them.” (Feuerstein, 1987, pg. 128) By shifting our attention thusly we may begin to glimpse the concrete perspectivalism which has gripped human consciousness for so long and pulled us headlong into the *objective* rationalism that has contributed to so many of the global perils we face today. In other words, the shift that is necessary (and is already occurring) is a shift from *spatial* perspectivity – which lends itself to dualities – to a *temporal* perspectivity – time as an intensity or quality. As Gebser puts it,

“...for the most part the pathological condition of our present civilization stems from the date of the introduction of perspectivity...which executed the alignment of aspects to a predetermined point and thereby effected a distortion of reality. For, the part is to a certain degree always a betrayal of the whole, for which reason the sum of the parts also only yields a fictitious whole but not an efficacious whole.” (Feuerstein, 1987, pg. 128-129)

This “distortion of reality” can be seen in all aspects of civilization from our relationship to the natural world to our worship of technology and fetishism of money;

but it appears most despairingly in our relationship to our selves and other human beings. By perceiving human beings (consciously or unconsciously) as objects whose value is determined in direct proportion to their contribution to the *techno-econ-organism*, we reduce people to statistics or points on a graph, with little to no intrinsic value. It is no wonder that pathologies like those mentioned by Mumford above pervade modern society. It is no wonder that students in most schools today see no purpose to their education. (What are they being educated *for* after all?) But once one begins to focus upon one's *relationship* to technology, one's *relationship* to the market, the *relationship* of the market to technology, the curricula of our schools' *relationship* to keeping the *techno-econ-organism* alive, one will then be shifting one's attention away from the object itself (spatial) to the complexity of the relationships *between* the objects (temporal). It is from this *aperspectival* approach that dualities and fixity begin to dissolve and, instead, begin to function as dynamic polarities - free from egocentricity.

According to Gebser,

“Only where the world is space-free and time-free, where ‘waring’<sup>6</sup> gains validity, where the world and we ourselves – the whole – become transparent and where the diaphanous and what is rendered diaphanous become the verition of the world, does the world become concrete and integral.”

Of course, as Gebser so lucidly illustrates in his *magnum opus*, this shift in perspective/consciousness is already happening. Its revelations can be seen in art, literature, science, health, and music – to mention just a few. So, why the urgency, one may ask? The urgency lies in the fact that the survival of our species depends upon this shift in consciousness and, within our current phase of consciousness, we are at an all too

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<sup>6</sup> From the German - *Wahren* or “verition”

obvious dead-end. No level of thinking or problem solving within the deficient rational will get us out of the predicaments we have created for ourselves (i.e. global financial collapse, dwindling resources, ecological crises, etc.). That is, we can no longer try to use technology to fix problems created and perpetuated by technology; we can no longer use the market to fix problems created and perpetuated by the market; we can no longer use our educational institutions to perpetuate the myth of either of these institutions – technology or the market. What then becomes the purpose of our schools? I have no concrete solutions to that problem. What I do have are some vital questions we can begin to ask ourselves about education and its role in assisting the Integral Stage to irrupt into modern consciousness:

- What is the world we are educating our young people *for*? What does it look like, considering the probable results of global crises?
- How do we begin to foster a sense of *intrinsic value* into the individuals within our school system? How do we allow students to perceive their own unique combination of gifts and mentor their ability to manifest them?
- What is *learning* and how does it really function?
- Why are the 3-R's at the core of most every curriculum and what assumptions does that reveal?
- What worldviews do the students occupy and how did they arrive at them? What worldviews do the “teachers” bring to the classroom (consciously or unconsciously) and convey to their students (consciously or unconsciously)?

- Are students viewed as open or closed systems? Are teachers viewed as open or closed systems? In other words, is the *relationship* of the teacher and the student seen as a one-way or a two-way street?

Of course, all of this rests upon the assumption that each one of us is personally invested in manifesting the *aperspectival* in ourselves first and foremost. For as Feuerstein says, “The way out of the dead end of the deficient rational structure of consciousness is the way of personal participation in, and cooperation with, the emergent mode of consciousness.” Gebser adds, “All work, the genuine work which we must achieve, is that which is most difficult and painful: the work on ourselves. If we do not freely take upon ourselves this pre-acceptance of the pain and torment, they will be visited upon us in otherwise necessary individual and universal collapse.” (Feuerstein, 1987, pg. 165)

### **Conclusion**

It seems obvious that, unlike Belyaev’s silver foxes, there is a way out of the experiment. We do not have to become floppy-eared, panting, hand-licking, subservient slaves to the system. However, it is not possible without waking up, facing fully the implications of our somnambulistic participation with the system, and confronting the painful reality that none of the tools we have used in the past will provide solutions to the problems we have all helped to create. I believe that there is hope for humanity. I also believe that we may be too late to fix the global crises that may eventually lead to our demise. I also know that to be fully present to the integral mutation is to be able to hold both of these and work with the tension *between* them. It is important to hold on to the

fact that, on the one hand, technology has been instrumental in the collapse of the biosphere; on the other hand, it has allowed the creation of a true network of global consciousness. It is important to hold that seeing ourselves and others as distinct and separate from each other and the planet has resulted in our abuse of the planet as a bottomless vessel of resources, and our abuse of each other as cogs in the wheels of industry; on the other hand individuation was a necessary step in ushering in a more mature phase of human existence. Our wont is to resolve the dualities, but it is within the tension of the dualities wherein lies our hope for salvation. If we are to educate our young to be stewards of a new phase of human existence, they must learn to be comfortable with complexity, mystery, magic, and myth. They must be equally at home with all of the brilliance and ingenuity brought forth from a full engagement with the mind, language, symbol, and logic. Most of all our young need to see themselves as unique expressions of the cosmos, a product of almost 14 billion years of evolution – an evolution far from finished. They are not only subject to the process of evolution but co-creators and participants within it.

So perhaps this story could begin: Here at the end of the first decade of the 21<sup>st</sup> century, we live approximately 14 billion years into the cosmogenesis of the Absolute... Whatever is written next is up to us.

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