

REVIEW

Ethnospherics

Origins of human cultures, their subjugation by the technosphere, the beginning of an ethnosphere, and steps needed to complete the ethnosphere

John Allen*

Global Ecotechnics Corporation, 7 Silver Hills Road, Santa Fe, New Mexico 87508, USA

ABSTRACT: With the invention of cultures human populations escaped dependence on a single ecosystem. Human cultures today have become an ecological and geological force equal in scale to the five previous kingdoms of life. Cultural structural forms arise from the recurrent fulfilment of economic and reproductive needs. Gaps not closed by the economic institutions in this fulfilment are universally handled by three metaphysical institutions: (1) magic to instill confidence, (2) science to provide explanations and (3) mysticism to deal with disasters. Linking institutions, such as arts, authority and techne, connect people with these master institutions. The interplay of these three levels led to the evolution of the 'Ten Thousand Cultures'. About six millennia ago the linking institution of techne invented the megamachine (the armed state) and a mode of economic expansion by conquest, ideology and trade control. By 1900 the technosphere and its pampered offspring War had devastated whole biomes and their cultures. When the Berlin Wall fell the technosphere unleashed ever more chaotic and unsustainable expansionism. However, a rising ethnosphere now self-organizes the remaining battered cultures. A union of specific cultural roots with universally accessible scientific spin-offs from techne, such as biospherics and geospherics, give their cultures the means to re-organize locally and communicate biospherically. The ethnosphere needs to create a cybersphere that gives immediate feedback on new impacts from the technosphere. A noosphere can then emerge in which intelligence will end the war on the biosphere and allow cultures to flourish once again, this time armed with hard-earned wisdom and biospheric understanding.

KEY WORDS: Cultures · Memes · Ethnosphere · Biosphere · Technosphere · World market · Cybersphere · Noosphere

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INTRODUCTION: THE EVOLUTION AND CONSTITUTION OF CULTURES

Animals can be conditioned by their stimulus-response patterns being selectively rewarded or punished by either their ecosystem or human action to develop habitual, individual use of tools, consciousness, perception, political scheming, even to transmit such learned behaviour by imitateness. Some animal species here and there have essayed the rudiments of every human behaviour and excelled in some.

However, at some point in time-space commencing about seven million years ago, what at least heuristi-

cally ought to be called a new Animalia phylum began its evolutionary trajectory by literally walking off from the primate order to form the Australopithecine order. The first form of the new phylum, *Homo habilis*, then split off from the Australopithecines about two million years ago (Tattersall & Schwartz 2001).¹ This new body plan and life history mutation, the criteria for phylum classification, consisted primarily in an eventual qua-

¹In their book *Extinct Humans*, Tattersall and Schwartz (2001) give a brilliant and detailed account of the several species discovered to date which constitute the historical members of what I call the phylum Neotonia and of their competitive migrations

drupling of the relative brain size of the primates which followed upon walking upright and gaining free use of hands. This quadrupled brain size also included a vastly increased complexity in the neo-cortex. Changes in the brain and pharynx eventually gave the ability to speak and create symbols and languages. These languages created an infinite world of potential actions, which can be called the human constant. Humans thereby acquired abilities to direct activities of their organisms for great lengths of time with the faculties of memory, imagination, and reflection, rather than being directed primarily from outside by instinctive response to sensory releasers.

This much bigger brain drastically changed humans' life history from that of their ancestors. Having grown too large to be delivered at more than 20 % of its final size, the human brain had to grow in two phases called endo-womb and exo-womb. These three new evolutionary results (immensely powerful brain, changed pharynx and complex life cycle) exapted to the point that humans had the time and ability to transmit a system of symbols, language, to their offspring during this exo-womb period and the extended childhood which followed. This world of signifiers competed with the now signified as well as directly sensed world for the attention of humans. With this gift of language, coupled with a life history including extended dependency, *Homo sapiens* invented by at least forty thousand years ago a complete new way of adaptation to their surroundings. They developed supra-organic life forms, cultures, whose powers of transmitting experientially learned behaviour directly from one generation to the next allowed them to radiate in a few millennia over the entire planet, with the exception of Antarctica. Humans alone of all life forms had escaped dependence on slow genetic adaptations to an ecosystem. Creative groups learned how to deal with new ecosystems, then taught their entire clan or tribe to use this knowledge to adapt quickly to any environment, from icy blizzards to coral reef hurricanes.

These new powers integrated units of hundreds, sometimes thousands, of people into millennia-sustainable modes of life capable of rapid evolution to meet new necessities or take new opportunities. If these units grew past the carrying capacity of their local ecosystem, they replicated and split off new cultures, each of which migrated to create its own history in a new ecosystem (Eldredge 1999).² These new units rapidly co-evolved adaptive behaviours by competition and co-operation between themselves to obtain all they needed from specific bioregions in each of the

panoply of Earth's biomes: forests, savannahs, deserts in their tropic, temperate, and even frigid variations.

Humans could carry these powers anywhere in a very lightweight way with a few tools, household possessions, and their archives of knowledges arranged into stories carried by memory. These stories spelled out key behaviours which, by daily, moon cycle, or yearly recurrence, turned into social structures. Memes (see glossary), the transmittable elements that construct culture, weigh less than genes. They add no gravitational burden in an oral society. Radiating throughout the planet, this new species increased to become an ecological and geological force on the scale of the previous five kingdoms of life. Today this force utilizes half of the biosphere's (see glossary) net primary productivity and has become a geological force rivalling bacteria by mining, refining, and moving billions of tons of matter annually, creating massive new deposits of tin, uranium, and iron. Culturally maintained cattle alone weigh twice the amount of all other large mammals.

Once one understands its dynamically massive planetary functioning, it becomes clear that this still-expanding web of cultures should be classified as life's sixth kingdom, Symbolia (Allen 2002).³ However, Symbolia's strictly genetic component constitutes the sole species representative of a once extensive phylum, which could be called Neotonia because its extended exo-womb and childhood periods mark a qualitatively different life plan from any other phylum of Animalia. These two coexisting realities, culture and biology, mean that humans and their ecology cannot be understood without both biological and culturological sciences. Biological necessities set up epigenetic factors that influence the perceptions of possibilities read by a human from their symbolic infinity (Wilson 1998).⁴ These biological factors cannot be reduced usefully further than by identifying them, as did the ancient Asian schools of psycho-physical science, as the three reaction potentialities of aversion, attraction, and bewilderment.

³In my extended paper 'Humanity: The Sixth Kingdom' (Allen 2002), I give the rationale and need for a reclassification of humanity following the lead of Wallace, Huxley, Lorenz and others. Humans were classified when little was known about the geologic time scale and nothing about the seven million years of rapid evolution between the chimpanzee evolution and our own. Our understanding of culture and our neurosystem was minimal. The religiously defended status quo misclassification of humanity has led to dangerous misunderstandings of the subtleties of both evolution and the scientific enterprise itself. (Paper delivered at the Institute of Ecotechnics Conference. Full text available at <http://www.biospheres.com/humanity.html>)

⁴Wilson (1998) states that 'What is truly unique about human evolution as opposed say to chimpanzee or wolf evolution, is that a large part of the environment shaping it has been cultural'

²Eldredge (1999) points out how humans have been the only species in which populations have escaped being part of a local ecosystem

These cultures, each calling its members 'The People', emulated species' co-evolution in the ancient and powerful animal kingdom by highly differentiating key memes (units of word, attitude, and behaviour) from their neighbours. These differentiations allowed them to stream their memetic flow down a channel, called tradition or history (Benedict 1934).⁵ Memes arranged in patterned symbolic codes, memomes, played the role in culture of genes and genome in biology. One's cultural body grew from the expression of the memomes as one's physical body grew from the expression of the genes and these two bodies interacted with each other to form a stimulating diversity of personalities.

Each of these self-organizing cultures existed self-sufficiently, but survival pressures also made them live in ecological balance with their surroundings, including the adjoining cultures. To minimize conflicts they developed symbolically saturated or numinous boundary markers such as Mount Kenya for the Gikuyu. The science called culturology or ethnology was founded in the late 19th century with scholars such as Fraser (1996) who looked for underlying patterns in the thousands of cultures. The entities possess definitive time, space, historical, ecological, and material vectors, besides some underlying patterns, and therefore were, separately and collectively, objects for scientific study.

Malinowsky (1944)⁶ discovered a way to observe and understand the functional complexities that hold a given culture together in its unique manifestation of the human constant. With some refinements, I use his basic perception that structural forms arise from the recurrent fulfilment of functional needs as a golden key to observing and understanding cultures in their integrity. With those heuristics, I examine the present crisis of cultures that have lost their self-organizing functional integrity since falling under the careless and impersonal control of the technosphere (see glossary).

The technosphere comprises the industrial world market system run by armed states backing commodity production and consumption, economically dependent upon extracting free (not accounted as costs) resources from the biosphere and its world of cultures. That enforced extraction irrevocably degrades human life and impoverishes the rich diversity of life forms and is itself clearly unsustainable since it destroys that upon which it feeds. However, today this military-industrial-media technosphere controls life on the planet independent of the human will, answering only

to the demands to increase profits and the security of its financial centres. But a counter-force, a meta-culture based on the ultimate value of the human constant, has begun its autopoiesis. Humans need and are creating an ethnosphere (see glossary) in order to stop destruction of the habitats and therefore the life of nearly all cultures and most large species.

Malinowsky sought and discovered the necessary patterns that generated the ten thousand vibrantly diverse cultures, identifying organizational units that he called institutions, meaning that these sub-units had a recognized 'charter' that socially sanctioned their task and rules. These institutions included family structure, kinship system, clan, clubs or societies, courtship rituals, fishing, hunting, gathering, and craft groups, age grades, and sometimes tribe and even nation, as exemplified in complex inter-tribal relationships such as the Iroquois or Trobrianders.

These co-ordinated institutions allow groups as small as several hundred and as large as tens of thousands to satisfy all the many definite functions that must work together to produce an independent culture. These functions include fulfilling economic necessities such as food, water, shelter, sex, reproduction, tools, clothing, and the overarching political-spiritual imperative to operate as a symbolic unity without schisms when educating children, celebrating feasts, surviving famines, and confronting death, disease, senility, ambition, crime, invasion, passionate eruptions, and seductive visions.

Malinowsky discovered three fundamental cultural institutions that can, in quite different ways, integrate into a symbolic and practicing unity all the heartaches, headaches, stomach-aches, passions, and glories encountered in the daily and seasonal economic life of humans. These ways he identified as 'magical', 'mystical' (he called it 'religion'), and 'scientific'. These integrative institutions must exist to make good the aches or 'gaps' caused by failures to deliver the goods in economic institutions such as fishing, hunting, gathering, clan, romance, or rearing children. These three institutions, albeit under many different names, must emerge in each culture to satisfy the three basic human reaction potentialities of attraction, aversion, and bewilderment at points of 'gap', in order that the culture vibrate at its highest, most unified symbolic level and not schism under stress.

Magic means effective ways of producing and reinforcing confidence in leaders when gaps, such as a shortage of deer or a border conflict, happen. Magic, properly performed with living techniques (and magical techniques can quickly become fossilized), assures a confident, crystallized organic hope which aids in succeeding at any difficult task that needs resolute, attractive, even charismatic leadership, such as

⁵Benedict's 1934 classic makes clear the vast range of differences in behaviours and worldviews that can be found in cultures

⁶Malinowsky, because of World War I, found himself confined for two years in the Trobriand Islands with an unparalleled chance to thoroughly immerse himself in one of the most complex cultural systems ever devised

hunting or initiation of a new age grade into womanhood.

People need science, that is, a good explanation to produce reassurance in cosmic order when gaps of disorder from natural forces such as storms, earthquakes, famine and animal migration strike them. Otherwise bewildering rumours and revelations threaten political schism and economic paralysis.

Mysticism deals with gaps that occur with deaths, diseases, sufferings, uncertainties, and brevity of life, with every kind of heartache, depression, and paranoia, by inducing healing ecstasy transcending existential aversions. By uplifting the downcast physically and emotionally, mysticism directly shows why and how, no matter what, everything still flows and life is more than worth the living.

Malinowsky adumbrated that inner know-hows of magic (doing), science (knowing), and mysticism (being) were too difficult to master for more than a few members of a culture, occupied as most members must be with practical tasks of continuity. In addition, it takes years of study to wield these know-hows in dangerous discontinuities or gaps. The integrative institutions therefore developed special languages to assist those ready for initiation in learning these highly disciplined methods. Societies of these initiates developed in every culture to manage a set of intermediate institutions that linked, in an unbreakable mesh of regular events, these very different daily economic and only occasional crisis-integrating functions.

Leaders created linking languages by taking words from the economic language and giving them two or more meanings. To the initiate, water, for example, might mean not only wet fluid, but also psychological subtlety. Unpromising literalists could thus be easily sorted out from real candidates. So the language of magic became metaphor (literally unbearable – to a straightforward mind). The inner language of mystics developed symbolic systems with as many as seven different levels of meanings that the initiate must learn before becoming a master. The language of science became abstract number and form (Rees 1999).⁷

In practice, a culture proceeded thusly: the economic hunting institution found a specific kangaroo and speared and butchered it for dinner. The magicians made a metaphor of the kangaroo hunt, often by dancing it in direct physical imitation. The mystics made a story with several levels of meaning about their cosmic totem, the kangaroo. The scientists kept counting the kangaroos caught and explored the geography and seasonality of their habitual behaviours. Kangaroo dinner, therefore, was also a ritual, an enlightenment,

and a taking stock. These meta-languages, intuitively ensconced from the beginning in the culture's daily languages, founded six types of key institutions whose charters or tasks were to link economic with integrating institutions. History with stories, myths, and legends told how this people became and remained The People and why the kangaroo was their totem. The muse of *Techne* (see [glossary](#)) demonstrated by master-apprenticeship relationships in what manner their tools, skills, and practical crafts must be applied to hunt and eat the kangaroo. Politics told the how and why and who and which of their authority system and sanctions enforced the rules of sharing the kangaroo. Art told how to gain and share delight in the kangaroo metaphor through music, dance, and mask. Philosophy told wise fables about personal contradictions and difficulties by using the character of the kangaroo as the foil. Adventure praised heroes who displayed their daring and cleverness in overcoming drought, heat, long walkabouts and surprising catastrophes to succeed in the hunt and chase. So all the people grew up knowing how to think, feel, and act with kangaroos.

These linking institutions singly or together assemble the entire people, elites, members, children, at cyclical moon, solar, or seasonal events, and on extraordinary occasions. They reinforce each other. Art renders Politics attractive; Politics gives Art a free hand. *Techne* rescues Adventure; Adventure stimulates *Techne*. History gives Philosophy material; Philosophy shows History meaning. All six linking institutions rely on metaphor, number, and metasymbolic rites to produce unifying media, such as sitting in a circle, dancing around a fire at festivals, pow-wows, song trails, or courting rituals, to coalesce their effects. And The People need these media to enjoy and reinforce their culture. By The People's actions they give feedback on realities to the watchful integrative leaders.

These three levels of institutions made life sexy, reproductive, healthy, happy, enlightening, and comfortable most of the time for most of The People (ethnos) in nearly all cultures. The integrative institutions produced reservoirs of experience, creative imagination, and methods that could adapt diverse impacts into their way of life. The linking institutions made sure that all the people, down to the smallest child, participated in creating details and vibrations of any new direction. Economic institutions provided happy children, food, shelter, clothing, and security for all. No one was unemployed or in jail, though real problem-types could be ostracized.

This world of 'ten thousand' cultures, ecological masters of six continents and capable of extensive sea travel, flourished throughout the planetary gamut of challenges of an Ice Age, its melting away, and carbon dioxide changes. It allowed individuals to achieve

⁷Rees (1999) points out that 'just six numbers' underlie all modern physics

heights of spontaneous experience through direct contact with eidetic dreams that could always find an objective correlative in the culture's metasymbolic system that manifested in sculpture, painting, costume, music, and dance. This young world of cultures brilliantly interacted and prospered with a 4.5 billion-year-old planet undergoing an ice-age cycle with a sea that rose and fell four hundred feet, and calibrated in intricate cycles with the solar system.

These cultures adapted to these changing conditions with the other dynamic denizens of their biosphere, tens of millions of co-evolving species and over ninety phylum or basic life forms that weighed a trillion tons. Their hardy sustainable population totalled about five million in the thousands of cultural units. New Guinea today still claims seven hundred and forty-five languages, Nepal seventy. Human cultures had exterminated many of the larger mammals with powerful spears, arrows and chase techniques, but had reached an equilibrium state with the remaining mammals, and even made partnerships with several species from reindeer to dogs.

Their geosphere (see glossary) received its radiation through clear skies unpolluted by their activities. On the coasts the sun and moon produced cleansing tides whose energy made estuaries and coral reefs extremely productive. Meteors, comets, moon, and planets enlightened night contemplations and provoked endless emotion, romance, and thought. Meteors occasionally contributed special material for tools of power. Time there was in plenty, because the cultures moved to different kinds and durations of time depending on the specific situation, including vertical and volumetric as well as successive times. They had not forgotten that time was sacred, their unique subjective, home for their I, from which they competently dealt with their sacred space, their unique objective, home for their culture.

However, these cultures could not locate the solar system and the Milky Way in the cosmos because the cultures themselves seemed to *be* the cosmos. Their linear time began with their founders, who had no idea of the billions of years that had been incorporated into their bodies, symbols, bioregion and skies. This dependence of their logic on material generated by their senses, activities, and eidetic dreams and visions was to leave them stunned when hit by the technosphere's panoply of power and knowledges perceived by 'reading' technical instruments and algorithms (Heelan 1983).⁸ The inspiring appearance of the seven billion-

year-old Milky Way, the largest and most untouchable sensual phenomenon, invited them, as it does us, to a happy hunting ground for eidetic and autogenic magical, mystical, and scientific dreams. They had no idea that larger phenomena than the Milky Way existed. More importantly, they had little idea of where on Earth far-off cultures lived, and, more ominously for their future, what these distant cultures were doing, although up to six thousand years ago, what far-off cultures were doing was so similar around the planet that knowing or not knowing made little difference.

By six thousand years ago the cultures had long used key inventions adapted to different bioregions, agriculture or herding, calendars, three basic language families, breeding of genetic lines in plants and animals, a complex pharmacobotany. Some had invented small prosperous, peaceful, classless cities where priestesses presided over wealthy integrative magic, number, and metasymbolic institutions. *Techne* was everywhere an honoured linking institution and its tool, basket, pot, rope, clothes, paint, medicine, and boat makers sat in free and easy equality and even interchangeability with artists, storytellers, and authority figures. In a few desert cultures sussing out irrigation, *Techne* already was regarded as first among equals. This period's long presence is preserved in near universal myth as 'The Golden Age' or paradise. This paradise was destroyed, its remnants hunted down in Mexican deserts, Amazonian jungles, Central Asian mountains, Southeast Asian lagoons and African savannahs, but it took six thousand years of war and hubris to accomplish this relentless crime.

THE REVOLT OF TECHNE AND ITS SUBJUGATION OF CULTURES

In the midst of this prosperous worldwide mosaic of cultures, each priding itself on its uniqueness, six thousand years ago one of the six linking institutions, *Techne*, revolted from serving the integrating institutions. Its initiates stole enough magic, science, and mysticism to begin their ruthless rise to power over the bodies of ecologically and symbolically balanced economic institutions. Certain nomadic cultures' recurrent raiding parties on peaceful agricultural towns gradually restructured their economic institutions as war parties.

Succeeding in war depended on technical superiority and upon making a mystic-, magic-, and science-saturated integrating institution. Venus had to be persuaded to drop Vulcan for Mars. War parties extracted annual tribute of livestock and grain from cultures that produced surpluses. After a millennia of these raids, *Techne* made its awesome ultimate invention, a megamachine, an armed state, which, wielded

⁸Heelan (1983) shows that the reading of technical instruments operates all the same perceptual activities as reading the human sensual instruments, but the thermometer or spectrometer give data inaccessible to the human senses. Therefore, the cultures must all access this know-how or must continue to deal with more extensive powers from outside

with ferocity by the developed war institution (Mumford 1997), unleashed amoral power upon the planet like the infamous genie in the bottle did upon the unsuspecting but greedy fisherman.

This megamachine, the armed state and its organized economic expansion by conquest, was *Techne's* supreme invention that dominated or destroyed the integrating institutions in its conquered cultures. From its beginning, *Techne's* megamachine enriched its founding raiding cultures by giving them eminent domain, tax, and flaunt from the conquered cultures that they turned into slaves. But *Techne* has perfected its beloved Frankenstein's power for five thousand years since Uruk and Egypt made the first glittering prototypes. *Techne* has organized theological and ideological indoctrinations to control minds, industrial revolution to exploit geological strata of buried carbon, thorough medical and psychiatric assessment to regulate populations, secret armed police to arrest dissidents, aerial and space surveillance of cities and neighbourhoods, censored and corporate-serving media to control information distribution, mass destruction weapons to terrorise, an arbitrary Caesarean calendar with moons eliminated (Arguelles 2002)⁹ and a treaty-enforced world market to ensure that its commodities wipe out non-money-based production.

The new war states quickly made their war parties into standing armies to control the resentful poorer classes at home and the seething conquered masses and threateningly ambitious rival states abroad. Strategically gifted war leaders destroyed rival war states to build empires, super states that exploited not only multiple cities and tribes but also smaller client states who were spared occupation and even cut in on the loot.

The conquering culture's war, market, and imperial *Techne* directed overall regional integration to which 'breeds without the (conquering culture's) Law' were forced to adapt. Megamachine supervised 'universal' dogmatic religions and tried to stamp out local symbolic religions by making long lists of laws they called morals to reinforce the state. Naturally, such unjust and severe exploitations evoke fear and provoke rebellion, so these empires have risen and fallen with regularity for five thousand years from revolution within and assault without, but *Techne* steadily evolved its megamachine from selective pressures of these deadly competitive empires.

The ancient Hebrew culture left us a two thousand year long historical record of drastic and deadly changes in their economic functions, lineages, tribes,

magicians, mystics, and scientists, resulting from encounters with these empires. In that record, despite being partisanly written from a definite fixed idea, one can trace the complete pattern of evils suffered by cultures adjacent to expansive megamachines. Drought and famine induced their small ancestral pastoral clan to accept largesse from the superior *techne* of an empire (granaries, orderly distribution). As their numbers increased from one of their clan member's giving them full access to this food surplus, they formed twelve tribes which that empire oppressed as a stateless and unarmed nation of specialist slaves, makers of adobe brick, hewers of wood, and drawers of water.

The Hebrews rebelled under a fierce magical and mystical leader who led them into an inhospitable wilderness for forty years, where he organized their lives with his science of Numbers. There, Moses and his close associates in magic, mystery, and miracle invented new linking languages for initiates to reintegrate this battered people. For them to escape being enslaved again, he added *Techne's* organized war system as the fourth integrating institution, but rejected its pride and joy: the armed state. To replace the armed state his new system of metasymbolic and allegorical writings instructed them how to align personally and collectively with his jealous and wrathful mystic power into an armed religion. His new algorithm scientifically numbered and organized the now-warlike tribes into assigned conquered territories as The Chosen People serving this powerful God. A new metaphor, The Promised Land, gave The Chosen People a magical program. Its leaders gained confidence and charisma carrying out such a definite program, space limited, but eternal in time.

Carefully planned successive victories over the eighty cities they planned to occupy transformed them into a conquering rather than a conquered culture, as described in the book of Deuteronomy. Killing, as ordered, all their captives, except for sparing the young women and infants in order to increase their own numbers, the twelve tribes soon occupied their assigned separate areas of the targeted desirable territory they had depopulated. While they had eliminated several cultures, they took over their agricultural infrastructures intact.

In spite of these conquests, this People did not want an armed state to rule over them. They decided to rely on volunteer war parties from the armed tribes and their elected chiefs' (called judges since they now had a written law) *baraka*. However, their relative power as an armed tribal religion declined against an armed state to the west whose *Techne* kept evolving by maintaining its growing sea trade against pirates and competitors, and who eventually forced them to pay tribute.

⁹Arguelles (2002) demonstrates how calendars are a major conditioning device for large-scale human behaviour

In response, these People demanded an armed state of their own with kings, priests, standing army, and police, and then they defeated their enemy's expansion. But they split into two kingdoms for causes reaching back to a feud in their tribal lineages. Defeated totally by a new empire to the east, one of their kingdoms and ten of their twelve tribes disappeared from their history into servitude. The remaining kingdom was defeated by a yet newer and subtler empire. The People remaining were then sent into exile to labour once again as a slave nation.

Yet another larger empire overthrew that empire, and shipped The People back to their Promised Land as a client state to aid in the spreading of its ritual doctrine of good and evil. But with new inventions from Techne and led by a genius at warfare, a state from the northwest with a flair for inventing new battle formations and cities abruptly conquered that empire. These self-confident and philosophic conquerors left The People in place in order the better to increase its numbers by acculturating them to their fabulous and gleaming civilization. Then yet another empire, whose God was War itself, ferociously conquered those brilliant masters and extracted taxes from The People until they revolted and re-armed their religion. After administering a crushing defeat to The People eighteen hundred years ago, that empire scattered them throughout its cities as stateless exiles, not as slaves but as merchants (Josephus 1984).

These types of brutal events, experienced by thousands of cultures by the end of the first three thousand years of the megamachine, still lay in the future for thousands more cultures located in high mountains, deep forests, far-off islands, and fierce deserts where Techne still could not prevail against the scientific guerrilla tactics, mystical unity and confident magic of an integrated culture. The New Guinea Highland clans, for example, fell only in the last half-century to a conquering Techne war, missionary and market. The tribes of the Congo and Zimbabwe and Zambia fell only a century ago. The difficulties of Hutu and Tutsi co-operating in a state subservient to the world market only replicate the patterns of Yoruba, Igbo, and Hausa in Nigeria, of Chinese, Malays, and Papuans in Indonesia, and of a hundred other neo-states.

Since Techne already controls their mineral and timber resources and shunts these products throughout the world for its own profits and progress, the new states mostly remain too poor to make their own programs. They are strong enough only to guard the new multinational owners of their cultures' formerly sacred landscapes, now bulldozed to make mines, oil and gas wells, logging devastations, coral reef destroying fisheries, tourist hotels, and chemical agricultures. The new states are so weak that their masters often change to first one and then another tribe's war leaders.

Independent institutional self-integration of a culture's own system without a state is almost impossible today because the world market, based on marginal utility profits, aggressively pushes its products and armed states' power into every area of life. Techne controls key integrative, linking and economic decisions in all these areas.

The key decisions, which are taken in secrecy since 1974 by seven leading states (the G-7) with the agreement of an eighth, are enforced on the peoples of the planet by binding treaties signed by a compliant 'elite'. Today, UNESCO lists only seventy very small cultural groups as out of contact with the world market, the last remnants of the ten thousand self-integrating cultures of six thousand years ago. These seventy are forced ever further back into the ever smaller forests of Amazonia to escape their local empire.

This triumphant Techne and its pampered offspring War, the largest business in the world, now cascade invention, production, marketing, and financing through interlocking corporate, educational, and military complexes devastating whole biomes and their cultures with a single policy directive under the code word 'development'. Five thousand years after the first war-based states introduced their no-holds-barred exploitation of natural and cultural resources as their ultimate science, humans around the planet have been alienated from most of the creative results of their love, labour and thought. They have seen their ways of life wrecked by commodity supply and demand cycles driven by profit maximization. Cultures are ransacked for ideas, plants and techniques that can be turned into business for little or no payment. Even sacred ceremonies are sold to entertain tourists.

By the end of the 19th century, this genie of Techne completely escaped the possibility of control by any single culture, even the most powerful. A handful of states armed with battleships, trains, machine guns, and dynamite quickly divided the planet into imperial zones to absorb their production and to supply more raw materials. Commodities were now shipped by Financial Capitalism under a handful of imperial flags.

Techne's new empires of Financial Capitalism quickly defeated all previous imperial models of Mercantile Capitalism in which goods were made by local capital, but which were then exported and imported by the mercantilists throughout the conquering empire and its colonies. America eliminated the Spanish empire; Japan pushed the Russian empire to revolution; the British looted the Chinese, broke up the Turkish, and exploited the Iranian empires. This handful of centres now owned all key means of production and infrastructure. Local capitalists became rare. If they couldn't become agents, locals might sit all day behind

a small stash of coconuts or bananas to sell a few. 'You can't stand in the way of Progress.'

Magical leaders, mystical symbolists, and scientific pattern discoverers of the Ten Thousand Cultures fled to fringes to escape disgrace or worse by relentless conquerors. None of the three ancient integrative institutions could handle the chasms gouged into tribal economics by Techne's planetary-scale War Finance. The end of the old systems became clear to all when Kitchener with his railroad supplies obliterated the intense mystical power of tribal Dervishes at Omdurman, and the imperial magicians and brilliant martial arts scientists of the Chinese Empire were machine-gunned down in the Kung Fu War.

This new force can well be called an unleashed genie, for it proudly operates independently 'of human will' under an 'invisible hand'. Conflicts over which set of empires should run the world's War Finance machine in the name of Techne ignited two world wars in the first half of the 20th century. Germans, Japanese, Russians, English, French, and Americans, each hoping to establish their New World Order, threw their superbly disciplined industrial machines into these Total Wars, devastating to all but Techne. Techne flourished, developing atomic bombs, biological and chemical warfare, missiles, nerve gas, the global market, electronic funds and information, the World Bank and the World Trade Organization.

Techne's world market financiers, organized armies and advertising-controlled media now openly claim that they are the integrating institutions, although disintegrating cultures and war on the biosphere are their main occupations. Nonetheless, two total wars between superbly organized empires made clear that the last two would-be world empires had themselves become too small to handle this infrahuman power of turning nature and cultures into money. Of the last two world empires left, the Russian fell when its own deprived peoples disassembled the deadly façade, only to be immediately co-opted by the world market system.

The American imperium, pretending to its people to still exist as an independent force by executing a series of expeditionary campaigns, directly serves dictates of the world market by protecting a ruthless lot of transnational oil and mineral producers. Its leaders, elected in mercenary circuses, cynically offer up their own people and ecology as tariff-free guinea pigs to Techne's merciless test of new products, many produced by poverty-stricken refugees from ecological disaster zones. So-called American international corporations take their money off-shore to avoid American taxes that might benefit American people, while insolently demanding American lives to defend their high-handed oil, mining, logging, and manufacturing operations that have alienated local peoples.

The technosphere finished organizing its planetary structure to exploit the entire biosphere and all its cultures when the last of the imperial total wars backed off before reaching its apocalypse by settling on a compromise in Korea in 1953. It finished its prime symbol and operating base, the New York World Trade Center, in 1973. Cities growing at exponential rates to tens of millions of people became its main product and power base. Swarms of computers and a blizzard of oil-using vehicles took care of their demanding transportation and communication systems. Energy excesses polluted and heated the skies (Snyder 1984). The Pentagon and NATO provided expertly armed states to put down secession from and rebellion against the world market's commands. The Berlin Wall fell in 1989 and the Soviet Russian empire disappeared. Russia and China joined the world market and unchecked Techne ruled the planet with ever more chaotic and unsustainable expansionism. One of its apologists declared that history had ended.

The terror in this shoddy triumph of the anonymous profit-maximizing Crassuses aspiring to be Caesars is that they consider nature and cultures as free and inexhaustible goods. Techne does not include Nature's and cultures' losses in its profit and loss accounting systems. So every 'raw' material, wood, fish, mineral, soil, rock, oil, gas, coal, animals, plants, idea, piece of scenery, and colourful costume that Techne discovers, inventories, and turns into a commodity, becomes risk-free game to hunt down and devour. 'Ten Thousand' Corporations rule the 'Ten Thousand' Cultures. All newspapers have a thick business section. None has a human cultures section or a biosphere section. Driven off their homelands and farms, nearly all the able-bodied among the 6.5 billion humans, headed toward ten billion in twenty years, struggle for jobs with Techne keeping the cost of labour commodities low and replacements of missile fodder easy.

Thus, the technosphere, writing and enforcing its infra-human will, wages its ruthless market wars against the biosphere under its own dynamic laws of growth and change, contemptuous of cultural and ecological context. One dynamic law, for example, is that computers will double their speed every eighteen months until they reach their physics-determined maximum. When I was working on part of Admiral Rickover's atomic submarine projects, he insisted that we design our metallurgy on properties that extrapolation showed would be available when the submarines went into production three years later, not the properties at the time of design. He insisted, and rightly so, that the increase of these properties could be extrapolated and counted on like gravity, without knowing who would produce these results.

Of course, the technosphere needs a people also, however unfulfilled they might have to remain. It has created its own worldwide supporting culture, Global-Tech, whose experts 'fix' any gap by ingenious measures including subsidies, loans, derivatives, two bought-and-paid-for Tweedledum and Tweedledee parties which split voters into interest blocks, bankruptcy, blockades, mass firings, mass immigration, and dispatching elite volunteer armies when all else fails. Those who fill GlobalTech roles originate from any one of the Ten Thousand Cultures or from within. In either case, they must be acculturated at a tested university to fill specialist roles to the letter ('professionally').

If any retained too much of their local culture they might not act with professional impartiality in crises carrying out financial orders, but with their own values. The Lakota at Wounded Knee or the Zapatistas in Chiapas or the Frontiersmen at Ruby Ridge in Idaho or the women in Nigerian oil regions fought without calculating the present value in dollars of such actions against arbitrary power, and so do many others.

GlobalTechers have to hire, fire, prosecute, jail, supervise and know how to call in backup power, always staying 'objective'. But to perform these operations in cold blood on people, they must be conditioned or seduced to see cultural opposition as ignorant, backward, and preferably evil. They have to be induced to see destroying forests, coral reefs, and wetlands as something 'we all have to live with.'

Bankers, security experts, production bosses, reductionist researchers, city planners, and chief executives must build no local loyalties. They must pack up to split elsewhere when so ordered or fired. They never know when they may be ordered to move or when their jobs will be terminated. On arrival wherever, whenever, they must support whatever has been done by whomever. They will be evacuated by military aircraft if the invasion becomes suddenly untenable.

Modern Financial War first shattered the thriving cultures that hosted it. This explosion of steam engines, national banks, and specialist division of labour operations first blew apart the cultures of England, France, and the Netherlands. A bitter proletariat, a divided nation, was created from this process and spread to the United States and Germany, which both began to build world navies to gain entrance to China and other desirable markets and raw materials. Rivalries between these states' expansionist activities destroyed the old-style mercantilist imperial mosaic cultures in Spain, Russia, Turkey, Egypt, China, and Japan. Russia (1905) and Japan (1868) were taken over by revolutionary converts to Techne before their capitals were occupied and their new governments enthusiastically joined in the race to take over 'backward' regions. Neither Cossacks, nor Great Walls, nor Samu-

rai, nor fearless Dervishes could keep out commodities backed by artillery.

These explosions of power, which easily defeated imperial cultures with large standing armies, mercilessly exploited from tribes who had no state at all, only magical warriors to deal with World Finance and its take-over schemes. Aborigines in their dreamtime, Trobrianders and their Kula ring, Hopi with their kiva and rain dances, Bora with their jaguar and anaconda visions, and Buganda with their lovely shambas were forced to watch sacred land seized.

Leaders of their integrative institutions were discredited, exiled, jailed, even killed. Their children were often removed to a technospheric mission or state centre for re-education. Some cultures were not only rendered headless while being forced to give up their resources but were then physically destroyed. Nonetheless, for two hundred years Techne's century-long predictions that the last member of x or y tribe will have been seen in twenty years have mostly proved false. The rise of the Lakota a second time at Wounded Knee is only the tip of the iceberg of these ingenious and heroic, though incomplete, survivals.

Techne cannot rid itself of the need to pretend to possess a science of community, magical confidence, and mystical mastery of hardships and losses. Techne must secure the consent of some humans to rule, and each human, no matter how professional, encounters staggering gaps in life that only these three methods address. To deal with these gaps and at the same time extract its profits, Techne produces scientific pills to dull every pain. Its magic puts out roaring metaphors of Thunderbirds and Cherokees, Giants and Bears, to deal with any doubts. Its mysticism gives massages for emotional horrors and Prozac and astrological explanations for life problems.

My own culture, integrated by institutions led by masters of Franklinian inventive science (the tooled-up barn), Thoreauian mysticism (wilderness areas), and Jeffersonian magic (checks and balances on the state), shrunk as did its most worthy opponent, the Plains Indian alliances. Both took savage hits from the chemical clouds of the farm factories and the Commodity Exchange that smogged and paved over American landscapes after the Total Wars.

However, total extinction did not usually occur when the technosphere took over a given culture. 'The human varmint is the cleverest varmint there is,' said Old Man McCoy when asked how he had survived a savage feud. Food, shelter, clothing, and sexual opportunities continued to be obtained, though at huge costs. Sometimes they came in greater quantity, with much less quality. Sugar, flour, and alcohol replaced meat, roots, and herbs; prostitution often replaced complaisance. These necessities, once thought to

require whole apparatus of integrative and linking institutions co-operating with the economic functions in a local nexus to assure their satisfaction, now appeared to arrive from powers both unknown and unknowable to the village leaders. Cargo cults arose that waited for airdrops. Sacks of flour appeared somehow to those who co-operated. Shoes, shirts, pants, dresses, underwear, and baseball caps arrived in the Mato Grosso; tin roofs gleamed in New Guinea highlands; affairs, marriages, and children continued, medicines came to treat old deadly diseases. Those who fought for a nostalgic return to the old ways often came to seem somewhat fanatic and out of touch with reality.

Techne thus conquered the world of peoples and recruited reinforcements for its GlobalTech culture, the human increase from the pick of ever more refugees from bulldozed homelands. Techne began its own ecology for its new people with intercontinental jets being the centrepiece. Being an inveterate adventurer in cultural matters, I once travelled around the world without leaving GlobalTech's hermetically quantified system just as if staying in a local village that you could walk around. I kept my costs and incomes balanced. You never have to get out of the Transit area at the airport or an adjacent free port. You can go to meditation, sleep in a hotel, buy, sell, consult, communicate, read, write, publish, work out, meet in your club, make friends, flirt, loaf, obtain medicines, whatever you wish.

Techne requires no remembering of lengthy kinship systems, clan obligations, vision-inducing ordeals, or inescapable rites and ceremonies to perform, except being always ready to prove your innocent non-terrorist identity and to make some money. As a credit card carrying member with a computerized identity from one of its accredited member states, you have no worries and access to a lot of action. Just don't get fired, laid-off, war-damaged, depressed or wrecked, fall into a stress-induced terminal illness, be abandoned by your significant partner, betrayed by your stock broker, or break down and turn to heroin or alcohol.

How did the technosphere get into these targeted cultures to recruit members? It found openings into every culture like a flood leaks into every basement because every culture has its basement, its chandalas, those who find the local norms too difficult, unrewarding, even oppressive, and who have therefore been socially stratified at the bottom of the heap or else thrown outside. To get a job in the market system, a chandala need only produce the eight hours a day appearance of minimum conformity because the lifetime village check-out of give and take and being cool does not prevail in the genie's cities where out of sight is out of mind. Advance scouts for Techne seek out chandalas and outsiders in order to gain information

and proselytes, and often these people find their lives easier and better off in the Techne world. Also, many cultures offer comparatively limited lives to women, who often feel they do much better to find some position or man in GlobalTech than accept a culturally ordained lower status. At times greedy chieftains, whose powers are limited by their local integrating institutions, are offered a tempting deal or face personal threats or both and may sign away the rights of their culture for payoffs.

After the culture's land has been sold or stolen, its magically and mystically obligatory maintenance duties end. The limitations of its local ecoscience become all too clear when the highway, power line, dam, or radioactive waste arrive, but anyone can still do well materially if they practice the GlobalTech science of discovering causes that effect money. In the old integrated culture one learned through a continuous apprenticeship many skills, like how to carry out reciprocal obligations and deal intuitively with surrounding nature and people to make one's living and help the clan.

But industrial-engineered job operations can be quickly learned without apprenticeships, and if you get hired to repeat these simple operations, some of this money magic arrives weekly. Walk to the city and hustle odd jobs. Move around to hot spots. Here today and gone tomorrow. Some learn how to do business deals. Cut down trees and sell them, re-plant the clear cutting with one imported species of faster-growing trees, let machines dig deep into your land, let big ships cyanide and dynamite your fish out, let branded hotels brand your beaches or mountain ridges, raise cash crops, and buy packaged food. And there's always burglary for guys and nightclubs for girls.

Those first to adopt these attitudes and take these actions become leaders who, backed by the local state or one of the world market's corporations, are often larger and better-paying than the cash-strapped state. It becomes dangerous to question these new leaders since they are officers of the new economics and the new law and police system. The neo-state, being vulnerable to civil war, is hostile to local cultures and their passionate nostalgia for the past.

GlobalTech tourists arrive to bask in well-advertised ruins which confirm that history is on their side. They grimace at the poverty-stricken and smile back at the beaming smiles of the new success stories. They turn sacred land into cheap photographs. In Sulawesi, the new leaders build low-wage factories that make low-cost clothing. In pueblos, tribal leaders build a busy casino. They move to a world city for their primary residence if they can make their get-away, otherwise they move to their local state's capital. Send back some money to the kindred to keep things going for them till

they wake up to reality and get a job. Practically everyone in the culture by this time lives on money, not the land, and buys nearly all they need. As poverty and insecurity increase, the World Bank's gross national product shows an increase in wealth since it counts only wages, not growing and weaving your own!

With each luxury tourist hotel, the technosphere adds another hundred or so square miles to its domain and GlobalTech gains a thousand new members. Only a relatively few square miles remain on the planet that the genie does not control. Even in hold out areas air and waters change their equilibrium composition in step with the chemical additions from the technosphere's spew.

Linking institutions that connected the culture's economic institutions with its integrative institutions lose their purpose in the general disintegration. Their most promising members must seek jobs or essay a small enterprise in the world market where they must follow the fashions rather than commune with the archetypes. These thinkers, artists and doers now watch their bottom line and not the faces of their audience to judge their work.

Techne has transformed from delightful muse to the most destructive god. It refuses to share power, and therefore every culture of a people now knows Techne must be toppled from its supremacy to save itself. Many of its own acolytes realize that Techne consumes their lives to fuel its careening path even as it consumes nature and cultures. Their lives, like the rest of nature, are considered a free good except for their labour costs. Though they get paychecks, they too are paid only marginal utility prices and are callously discarded the moment they cost too much on the present value charts.

EMERGENCE OF THE ETHNOSPHERE

However, many people, though diminished by these losses of a rich and varied inner life, outer companionship and a beloved ecology, have expanded their geographic and cultural horizons by exile and migration for survival. Always on the lookout for help, they vastly increase their intellectual horizon due to Techne's spin-off discoveries of cosmic realities. They contemplate the quantum, quark, atom, molecule, microbes, evolution, biosphere, geosphere, billions of years of time, and billions of light years of space. They learn to 'read' thermometers, telescopes, GPS, and computer systems and thus discern scientific entities like total systems from their enriched perceptual hermeneutics (Heelan 1983).

Under survival pressures, their minds open and grow rapidly. They sharpen and deepen their struggle to

save and improve the best of their culture with data and insights from the Mars explorations, their distant friends on the Internet, the theory of information, works of the avant-garde, and contemplations of other worldviews and exotic divinities. They discover world history, where their culture forms but a single thread, but discover also that each thread gives its colour to the weaving. They discover the amazing throng of humanity in which each shares the human constant.

Techne's new uniform public schools, devoid of apprenticeships and dull with indoctrination but with all student types, allow them to experiment in relating with others and with themselves. Techne's pace of innovation forces the young to think and feel for themselves and to question out-of-it authority figures to get in touch with what's really happening. Some participate in the *mysterium tremendum* aroused by the qualitative implications of stupendous images in the media, contemplative fallout from the technosphere's ceaseless probing of space, time, and matter for exploitation. Some find their subconscious constellating new archetypes of desirable desire, perhaps triggered from Hollywood films or by far-out behaviours emanating from strangers passing through, eager to study their culture. Some try out bizarre and even violent cure-alls.

Some now access their superconscious more easily due to the market's dissolution of tight secret societies of mystics and their consequent releasing to the marketplace of distillations of their many methods. Somewhat freed from mullahs' arbitrary decrees, able to move freely throughout the world, authoritative Sufis reveal the meanings hidden from inquisitors and torturers by seven locks in ancient texts. Freed from the restrictions of tribal sanctions, shamans show aspiring and promising part-time apprentices from wherever how herbal knowledge, a special space, and mind discipline can heal and enlighten.

New sub-cultures openly challenge the market *mano a mano*, creating technical innovations to assist its own forms. One of these created the personal computer and another the Electronic Frontier Foundation. One created the Haight-Ashbury cauldron of experimental lifestyles in 1967. One, the situationists, put new energy into France in 1968. Greenpeace made a place for thoughtful direct action on the ecological front line. A few crashed sensationally before they took off, but designers went back to work, utilizing the learning curve. The energy and know-how that created the Ten Thousand Cultures era still bubbles up from the human constant, manifesting spontaneously in right times and right places with right people with right skills. Porto Alegre in Brazil held the first world social forum on ethnospheric issues such as sustainability and cultural justice in 2001, the same weekend

that the world market's Economic Forum on profit growth met in Davos, Switzerland. Porto Alegre drew over 10 000 self-organizing participants from around the planet and it needed no extra police protection.

Cultural institutions can be precisely studied by means of recurrent phenomena analogous in function to genes in the biosphere. These elementary units, called memes, might be a word, an idea, a value, a quality, an emotion, a gesture, or a sensation. Memes compose the organized complexities of cultures, just as genes of various kinds direct the creation of the innumerable types of organisms in the biosphere (Blackmore 1999).¹⁰ All the memes of a culture could be called a memome, an analogy to genome.

Individual meme carriers activate their meme vocabulary to interact briefly in choreographed exchange. 'Hi.' 'Hi.' Or with a three-phase handshake. However, sometimes meme carriers meet to make a scene. Scenes are higher-level phenomena that meme carriers create to achieve an objective. Scenes commence and end when the number of carriers changes, by carriers making or 'splitting' the scene. Two carriers might meet to use memes charged with emotional energy to attain different objectives connected, say, with love. The entrance of a third carrier with the objective of revenge leads to a very different scene. Scenes vary widely from culture to culture, each drawing on a given culture's store of memes. The exigencies and flairs in scenes often spontaneously create new memes where needed or desired. In a scene, word memes develop into propositions.

Scenes form the nuclei of actions deployed by a culture's institutions to attain overall objectives of production, reproduction, and significance, the yet higher level of dramatic themes. The Theme of Fishing in Komodo now includes the drama of conserving and enjoying their glorious reef competing with cashing in on fishing with dynamite and cyanide and marketing to Hong Kong. The Theme of the Lineage in most cultures now includes dramas of separations caused by migration to the world cities and the struggle over returning to the home village to set up a school with the earned money or of disappearing into the world of business. A theme's uncertainty and conflicts necessitate creating complete dramas whose through-line builds all its scenes to climaxes that cathart pity and terror or dispense bacchanalian laughter and love.

A composer or director first masters by living through a suite of scenes of sufficient raw material to weave one of these 'in-life' dramas. Skilled directors compose these scenes into satisfying hours, days, even

life-long dramas that transmit the renewed culture on many levels. A Rama festival on the Ganges will last a month. Succeeding in the many-sided scenes and themes of the Kula ring makes a central drama to enlighten and enrich all the years of manhood for a Trobriander. Many dramas last all night. In themes, propositions develop into fields of discourse.

Among the Huichol, the dancers at the annual three-day sacred unifying ceremony are choreographed by Artists and harmonized by Authority and Philosophy manifesting as the Marakame sitting in the midst of the fractal swirl. Unarmed but strong and skilful warriors of a stateless Techne protect these Artists and Philosophers. The whole ceremony is authenticated by their legendary History, whose initiates bury their mnemonic talismans beneath the sacred fire in their stone temple so the mementos can be brought out before the tribe once every five years to verify the old and polished stories.

The several great themes or dramas of the culture, guided to their all-out limits in wildly different aspects of the human constant by their brilliant directors, must be integrated on the highest level by producers of scientific, mystical, and magical dreams. These dreams, without which a people withers, have the power to spark a participation mystique unifying individual, group, and animate nature, no matter how diversely and strangely the dramas may manifest in minds, on a stage, or in the midst of lives. The Eleusinian Mysteries celebrated the most contradictory tragedies, satires, and comedies. This extraordinary unity in diversity made Athens the school of Greek cultures.

The actual dream masters usually don't reveal themselves directly but are content in their daily rounds to appear as actors and/or directors in scenes and dramas taking place in functional or linking institutions. These masters act in the dream worlds of their culture by invisibly contacting geometric dreams of knowledge, multi-valued dreams of total cosmic symbols, focused dreams of total analogic magic, and then bringing about the proper unifying celebration. In these dreams, fields of discourse are gathered into concentrated knowledges.

Cycles, not growing profits and populations, had been the integrators' talisman from the beginning. They always closed their magic circles except, perhaps, for a small chalked line, leaving the circle open to some necessary but occasional adaptation to the new. However, these profound cyclic knowledges left the dream masters almost helpless when Techne hurtled humans toward a Faustian infinity which turned into hyperbolic disaster. Both the universe and dream masters prefer spirals to circles and hyperbolas.

Integrative dreams exemplified in living masters and institutions emerged and coalesced to brilliant coher-

¹⁰Blackmore (1999) shows how memes and genes are similar not only in function but in being shaped by the same evolutionary processes

ence more than ten thousand times over fifty thousand years from the heart's desire of millions of humans. Living in the synergy of a vibrant culture's dreams, a human lives happiness. One attains the rank of being recognized by your fellows as a real Lakota, or real Tibetan, or real Berber, or in my case, a real Frontiersman. All cultures have some variation of the saying 'it takes one to know one'. And, at this level there is no East nor West nor North nor South when exemplars from different cultures meet.

Beyond that wonderful stage, some realize that deep emergencies activate this coherence in every member of their culture. Thus incredible cultural feats rise in glory, such as Dull Knife of the Northern Cheyenne, who returned with his whole people to his homeland despite ferocious imprisonment and battles. Such as Xenophon who brought his Ten Thousand safely to the Black Sea fighting the massed power of the Persian Empire. Such as the recent destruction of the Black and Red Empires of Destruction by The Peoples of the Earth. Such as the dauntless escape of Tibetan culture over the Himalayas.

However, these marvellous dreams, dramatic themes, life-drenched scenes, significant memes of the Ten Thousand Cultures, have been thrown on The Market which coldly assesses them as well as lands, people, forests, and coral reefs for their exact marginal utility to investment. Even legendary dreams are caricatured to wring out profits in stage sets for Club Titillation.

Techne does not recognize eidetic dreams springing forth from the human constant aligned with biospheric conditions to guide a people in an integrating action, but calculatingly designs illusions based on standardized sense impressions, which are dependent upon branded industrial geometries to sell alienated individuals compensatory images carried by its products. Techne's market masters determine the rate of style changes needed to keep frustrated humans ever shopping for happiness in their fabricated fantasyland. These statistically calculated illusions produce a clever simulacrum of a real culture: CEO's hawking magical fixes and formulas, bankers mystically aligning everything by present value ratios and marketers scientifically measuring buyers' susceptibilities to a new Logo by using formulas discovered by Jung, Freud, and Pavlov: archetypes, libido, and conditioning.

The Newari in Patan construct a formidable wooden juggernaut by using memes and scenes from their sustainable economic institutions. Artists decorate and choreograph and adventurers pull it careening down narrow streets of brick houses to demonstrate the mystical dream of Shiva-Kali, creation-destruction. This demonstration assists all the people in accordance with their understanding in realizing the dreams of plea-

sure (magic), wealth (science), and daily program (mystical unity): kama, artha, and dharma. The three dreams integrate in a radiant dream (moksha), or true knowledge about all phenomena, namely, that each perception notifies the arrival of reality, even the screams accompanying the occasional balcony swaying from the juggernaut's impact.

But this powerful work of Newari art is as nothing compared to the technospheric juggernaut controlling a population of billions, wealth of trillions, dams creating inland seas, atomic bombs and poison gases, space ships monitoring opposition, and cheap flour and electronic circuses to divert incipient revolts. This new juggernaut bulldozes multitudinous experience-laden cultural byways into a few monotonous superhighways populated by machines whose dreamless proliferation poisons our skies.

However, millions of aroused humans struggle against this litany of darkened but once shining cultures designed by and for the human constant and endeavour to create a world synergy of cultures. This ethnosphere is composed of those from any culture, new and old, who understand that hatred of a foreign culture paves the way to one's own demise and who have developed a common language to see the total system, planet, biosphere, and cosmos in which they exist. They also see their common threat from the remorseless market whose devouring of nature and culture is protected and enforced by armed states. New disciplines like Ecotechnics – the ecology of technics, and Ecolonomics – the ecology of economics, help them work out a common field of action. They aim to coordinate the ten thousand centres of meaning with the life-enhancing portion of Techne while stopping its wanton destruction.

This ethnosphere is now self-organizing, catalysed by disenfranchised masters and apprentices in the old integrative institutions, aided by many experts in exile from the old linking and economic institutions in their cultures and by disillusioned drop-outs from Global-Tech who tuned up, turned off, and dropped in. This synergy has evolved in an accelerated manner since 1967, when significant new memes, based on perceptually dealing with Techne's wilful disasters at the same energetically conscious level that one must deal with hurricanes, volcanoes, droughts, first developed on a planetary basis. San Francisco, Prague, Tangier, Paris, London, Katmandu, Oaxaca, Goa, Ibiza, Cuzco, New York, Kyoto, and Bali were some key concentration points. Movements and attitudes (cool), perceptions (dig that), emotions (groovy), thought (far out), diet (organic), clothing (with it), education (unforced but carefully observed), life (green), style (hip), heuristics (grokking), technics (eco), and music (rock and roll) could and did travel anywhere on the planet

within hours. Meme transfer around the planet's apartments, studios, parties, estates, and remote areas by electronics backed up by jet travel took no more time than it did in a 10th century Sussex village, or an 1800 circle of Lakota tepees, or a 1900 circle of Bemba thatch huts.

The ethnosphere synergy, as a new level of complexity beyond the technosphere, dates from McLuhan (1967) perceiving a Global Village (as distinct from the Global Market) acting with its new maxim: think globally, act locally.¹¹ Tens of thousands engaged in creating the ethnosphere bought his books recognizing exactly where the author was coming from. McLuhan recognized that the Media was the real Message, not the market's specific advertising. Techne debased language itself, quantified to cost per second, with its marketing euphemisms. Advertising deconstructs to a basic virus commodity spread to weaken resistant cultures.

'Making the scene(s)' with these interesting new memes became a planet-wide norm of behaviour competing in every region with 'buttoned down' Global-Tech norms. Gaining skill by making a vast array of experiential scenes, many groups began to create from these scenes an ensemble of thematic dramas for the ethnosphere such as saving endangered cultures, species, forests, coral reefs, artists, neighbourhoods, waters and airs. Others created synergistic moods, ideas and behaviours that increased awareness of Techne's text, pretext, subtext and context. Thousands of artists such as Hendrix, the Beatles, Burroughs, Coleman, Garcia, Warhol, Fellini, the Living Theater and Theater of All Possibilities seceded from Global-Tech's ideological and emotional strictures.

Artists, philosophers, and explorers' tireless touring of the emerging ethnosphere gave it a planetary style. Coleman spoke of a new world music and incorporated elements of Yoruba, Jajouka and Baroque into his compositions. Philosophers like Fuller (*Idea and Integrity*, 1969) and Shah (*The Sufis*, 1971) showed how apparently opposing conceptual schemes, if attuned to reality, could synergize. Adventurer-scientists like Shultes, Davis (2001),¹² Earle, Alling, Sullivan, Head, Titov, and Aldrin showed how to explore the entire world ocean, world rain forest and solarsphere space and bring back needed knowledge to humanity without becoming a commodity.

By fighting in thought and action against industrial-military-spiritual aggressions, free-thinking individu-

als from these cultures regained their freedom of self-determination. This intense school of life gives profound and cosmically ranging experiences.

These new kinds of heroes and heroines transcend the old bioregional isolation and empirical local scientific ideas that, however useful in their original context in architecture, medicine and agriculture, could not measure cosmic time, space, fields, and energies. They quickly understood that old cultures lacked the global know-how to deal with ruthless intrusions from militarised commodities and apparatuses. These limitations of local knowledge and history, no matter how deep their roots, had proved the downfall of those magnificent powers when confronted by GlobalTech, which, operating on a planetary level, always outnumbered and outmassed any local counterattack. Resistant centres were reduced or destroyed one at a time. The independent cultures were divided informationally from each other and therefore ripe for conquest.

Furthermore, the old Ten Thousand Cultures, for all their extraordinary achievements, could not perceive past the natural powers of humans and their local cultural and bioregional framework even though their masters knew how at the right time and place to raise themselves to godlike radiance, delight, and discrimination. At special ceremonies they could even raise entire communities to a transcendent state. Nonetheless, even in the highest states of consciousness and delight, they had no technical instruments to see beyond their local bioregions to the biosphere. They could not see past the sky to the galaxies and quanta or past their orally transmitted history to include the total human enterprise. They could not see past kinship to free association. They could not see the infrared and hear the ultrasonic and thus tune in on the entire animal kingdom's environment. They could not see the total world of cultures of which they were members.

Only the technosphere's sense-extending instruments take humans past percepts limited by their organisms. Techne's profit-driven expansion created as a by-product this common worldwide scientific language about previously undreamed-of cosmic entities and forces such as biospheres, electrons, quanta, and galaxies. Now, every questing member of the 'rainbow of cultures' (Levi-Strauss 1961) can share in a cross-cultural synergy and free thought of scientific understanding while fighting for his/her essential bioregional magic and participation mystique.

Many of the young in battered cultures now operate on the Net and clue themselves in on pearls hidden in matrices of hype. They wise up to creative implications of the new science evolved within the matrix of Techne as well as to sinister implications of its economics. They see that cosmic principles, discovered by profit and war-funded science, can be exapted to help a common

¹¹McLuhan (1967) emphasized that new planetary communications systems allowed oppressed local regions to break out of their ghettos

¹²Davis (2001) brings out in a way that cannot be evaded the ravages being inflicted on the most poetic of cultures

understanding arise between all cultures. These people form the avant-garde of the effort, while many elders fight brave rearguard actions to preserve continuous manifesting realities of the Ten Thousand Cultures. These visionary youth and wise elders are creating a planetary *transvanguardia* that gifts their local cultures with cutting-edge sensibility.

Scientists increase who accredit themselves by securing independent means and setting up their own corporations which integrate with nature and cultures. They enlighten their local communities, building new informational sciences to serve self-organizing complex systems like the biosphere and ethnosphere.

These new actors multiplied when direct coercions like the Berlin Wall, the Politbureau's KGB, and the Maoists that directly suppressed cultures in nearly a third of the planet were peacefully overthrown by their peoples led in unprecedentedly sophisticated and peaceful revolutions by cultural dream masters like Havel and Sakharov. Networks linked institutions, artists, historians, adventurers, non-governmental organization leaders, and free thinking philosophers such as Gilmore, Barlow, and Kapor at the Electronic Frontier Foundation, Lanier who envisioned virtual reality and Lugari who made the Columbian community Gaviotas from life-based technical breakthroughs. All are leaders in ethnospheric integration. Heuristic projects such as Biosphere 2, the Eden Project, and coral reef and rainforest reserves began to span the planet. Realization spread that a genuine option exists to restore Techne to her dance as a thrilling Muse to deepen human perception, while ending her chilling dictatorship over nature and dreams.

Techne exacts its highest price from humans by disrupting and truncating their life cycle (Erickson 1982).¹³ Humans that fall under its ceaseless pressures no longer have the time to generate the psycho-sexual, psycho-social, and spiritual skills needed to create fulfilling lives. Enough for Techne that humans serve as a labour commodity, intellectual or manual, no matter how they are 'nickel and dimed' out of leisure and instinctual well-being.

A human's psycho-sexual stages, oral, anal, and genital, and the latency period of games, groups, and development of competencies by mimicry need unregimented time, space, and cultural resources to develop without excessive repressions, denials, and splittings. Youth needs, longs for, and strives for a romantic world of intimacy, comradeship, and individual quests to discover an identity and fashion a lifestyle that can integrate the projective ecstasies and transference dynamics of full oncoming sexuality. Maturity needs,

wishes, and labours to attain somatic power, psycho-social intelligence and personally coordinated networks in order to create the next generation and its milieu. Elders need, aspire to, and ripen wisdom to transcend and shape their entire cycle from beyond death to before conception and thus channel cosmic challenges into local goodness and beauty.

The market now exploits all these stages of the human life cycle as product opportunities. Techne does not recognize much use for the final life stage except to sell costly painkillers and, on this count alone, is convicted as a supreme traitor to humanity. In fact, it forcefully retires humans entering this stage out of meaningful roles into hangers-on, casting them to act out isolated and desolate scenes as idle and expensive consumers until they disappear. Techne does not encourage humans at any stage to realize that they are ends-in-themselves, the essential task of human culture. The old integrative institutions had magical ways to achieve youthful life-long personal identity. That identity reached back long before birth and forward long after death. They had scientific ways to order natural processes to satisfy metabolic Techne. Their sages generated mystical algorithms to unify all life and dreams and to make visible in their flesh prowess that served to guarantee objective hope to those still struggling on their hazardous paths.

As the ethnosphere began to self-organize over the last fifty years, resourceful and desperate people began to mate the new cosmic knowledges spun off by Techne with golden wisdoms from their damaged but resilient cultures. Skilled practitioners of these ever fresh dreams now explore and practice reciprocal maintenance with their counterparts from whatever culture. They mutually explore the new cosmic-planetary-biospheric-social ocean revealed by Techne's legerdemain without forgetting that they each have different home ports. New eidetic dreams now directly show adept humans ways to adapt the technosphere's discovery of great entities of the physical universe to the human constant.

Skilled harbingers are introducing into the world of cultures their almost fatally missing element, a practical understanding of their common interests, the ethnosphere. The Bora shaman analyses oil industry behaviours with the Harvard anthropologist while he initiates her into the powers of the Jaguar's world. The New Guinea clan leader discusses sustainable agriculture with a visiting Australian ecologist and teaches him hospitality. A Middle Eastern Sufi sheik learns information theory with a philosopher at Cambridge and clears up the metaphysics of archetypes for him. An Aboriginal elder studies geological formations with a French geophysicist and shows her how to walkabout through a harsh desert. A Russian atomic

¹³Erickson (1982) details the vulnerability of the human to manipulation in early life stages

physicist discusses quantum phenomena in light with a Zen master in Kyoto who shows him quanta in mind action. Such fascinating meetings are threshed out in eager conversations with friends by the principals. No one who has sampled these delicious fruits ever forgets the taste and searches for more.

This rapidly self-organizing world manifests its growing powers in hundreds of tribal and cultural leaders cooperating in actions to create communities and collective institutions to counter takeovers and wreckage of their lands and lives. It throws up inspired leaders of non-governmental organizations such as Nature Conservation, Save the Orang-Utang, Save the Rainforests, The Planetary Coral Reef Foundation, The Electronic Frontier Foundation, and hundreds of others. It consciously rivals the intensity and unity of the greatest events of the past by producing self-coordinating people's events such as The Oregon County Fair, Glastonbury gatherings, commemorative vigils in Mexico City and Johannesburg, great Amerindian pow-wows, the gathering of Mountain Clans in New Guinea, and peaceful demonstrations for no pre-emptive war by millions synchronized on the same day around the world.

The ethnosphere communicates in planetary networks of affinity on The Net and cell phones that go around official channels, punctuated by celebratory 'meatspace' get-togethers in special clubs and outdoor locations. Alert witnesses activate it with handheld digital cameras recording moments of Techne's brutality to be put on The Net and rectified by ethnospheric condemnation. Culturally diverse coalitions of millions of unpaid individuals activate it to stop devastations of dolphins, rainforests, and humans from impoverishing its future.

Many members of the dominant GlobalTech culture revolt from being exploited and wasted. Although obtaining high pay and perks, they must huddle from the worst impacts of their master in leafy gas-guzzling suburbs, gated communities, security-intense laboratories, mines, oil rigs, underground communication centres, tightly-guarded hotels, remote islands, and fenced free ports. Its key members endure unceasing pressure. Even top executives are often tossed on the scrap heap at an arbitrary age or as a scapegoat or for illness. Even top capitalists are often defrauded from their fortunes. Realizing this silent desperation and finding their conscience, the best often drop out or work from within to join the ethnospheric processes.

Confronting the issue of runaway economics directly, inspired people have begun forming new institutions such as tribal corporations, small loan banks, farmers' markets, and sophisticated bartering and auction systems to replace the purely profit-ruled world market where 'every man has his price'. Time/money systems such as Nayahan Banjar in Bali-

nese society are not allowed to disappear but are kept in balance with the rupiah money economy (B. Lietaer unpubl.). Ethnospheric economics aims for topline profits in biomass and biodiversity and for the peoples doing the work or supplying the resources, as well as for bottom-line profits needed to maintain and improve capital stock. Ethnospheric peoples, aiming to exist as an end in themselves, become consciously co-operating partners with the biosphere. Productive and high-morale small teams, creative task groups, know where and how their products are used and they responsibly guide the probable cascade of consequences from their actions.

STEPS NEEDED TO COMPLETE THE ETHNOSPHERE

The ethnosphere's evolution is subject to all the previously emergent selection processes: catastrophic, natural, sexual, cultural, and economic. Its selected mutations are intentional humanity-wide dissemination of inventions and modifications in memes, scenes, themes, dreams, and ecologic and ecotechnical systems aimed at making a meta-culture capable of returning Techne to serve humanity and its biospheric matrix. Those mutations that can't meet those criteria are selected against by the ethnosphere. Thus integrative masters in old and new cultures, from ten thousand traditions, escape ancient curses of self-isolation and limitations of local empirical science. By recurring again and again to work in this manner, they create new integrating structures devoid of fossilized magic, superstitious mysticism, and reductionist science.

The driving force for these masters are their peoples' hatred of the divide-and-conquer processes of an imperial commodity system that devalues and destroys humanity's non-monetary achievements and possibilities. Nearly all cultures now try, by all means available, to exchange alerts with others, to assess technical threats and opportunities, and to co-operate with whom they can to liberate the human constant.

Creative groups endeavour to create a complete science, a knowledge including the developing sciences of complexity like astronautics, geospherics, biospherics, and technospherics. For example, biospherics can integrate genomics, ecology, pedology, botany, zoology, bacteriology, culturology, linguistics, climatology, palaeontology, archaeology, evolution, physiology, epidemiology, biochemistry, biophysics, catastrophe theory, and other specialties into a power greater than their sum, a grasp of life's synergetic functioning. Then dream masters of science can once again properly serve humanity as the guardian of Techne, rather than its slave.

This tremendous task of restoring human tempo and biospheric regard requires creating a comprehensive feedback system, the cybersphere (see [glossary](#)). Cybersphere must synergize essential information affecting the ethnosphere and biosphere from wherever it emerges, but its basis will be the personal enjoyment of robust freedom in conversation, speech, music, movies, theatre, and publications abetted by the power of The Net (Brown 2001).¹⁴ Above all, building the cybersphere will depend on individual humans, guided by necessity and opportunity, continuing to develop new perceptual capacities whose memes are widely spread by marvellous and revelatory documentaries of cultures, species, ecologies, and planets.

The cybersphere must more than mirror the on-going actions of *Techné*. It must comprehensively anticipate difficulties and catastrophe and sound wake-up alarms. Measured effects must include climatic change, sources of poison build-ups in the atmosphere and water, dumping of wastes, spread of diseases and invasive life forms, dust bowls, deforestation, and triggering of earthquakes. All uses of force and finance to eliminate cultural and individual evaluations and feedback need planetary alarm procedures. For example, Biosphere 2 demonstrated a proto-cybersphere continuously reporting its atmosphere, hydrosphere, wastes, biomass production, species status, system chemistry, waves, winds, diets, health, and workload.

The planetary cybersphere must especially give direct feedback to ethnospherians on what goes on during large-scale projects, even those underwritten by the peoples' consensus. The inevitable occurrence of catastrophes when even well-intentioned projects are not continuously and publicly monitored led to the discovery of the Law of Unintended Consequences. Therefore forecasts of the range of effects of all large-scale projects must be continuously recalibrated. The introduction of a single new molecule, water drilling technique or genetically altered species to the market can initiate a tidal wave effect tensing the biosphere's web of causation and threaten serious breaks. This completed cybersphere will enable the geo-bio-techno-ethnosphere 'physicians' called for by Lovelock (2000) to go into action. I would rather call them planetary trouble-shooters, but it's the same idea.

Beyond the cybersphere, whose creation will be a defining task for the ethnosphere, glimmers a functional world of intelligence, utilizing all findings of art, science, and history, the noosphere (see [glossary](#)), which will embody the ability to achieve necessary

objectives (Vernadsky 1986).¹⁵ Its task groups will reconstruct the technosphere in the interests of the peoples who will form a freely thinking humanity, the ethnosphere. However, cybersphere without noospheric guidance might be seized by GlobalTech states to monitor and suppress the evolving ethnosphere.

This noosphere, so needed by the peoples, will be helped to arise by prototyping and establishing a biospheric base on Mars, because that environment will tolerate only the most intelligent design and life-enhancing behaviours. Conserving Antarctica, coral reefs, rainforests, wetlands and diversity everywhere will also help to form this bold and compassionate intelligence.

The creative abilities of Ten Thousand Cultures fighting with new strategies to regain their vitality must not be reburied from within by quixotic endeavours to return to hermetically sealed and heavily armed cultures. Transforming into the synergistic ethnosphere, local cultures must gain and maintain easy access to cosmic science and to world history. In some cultures distorted by conquest and fears basic human rights must be restored to women. Much of the violence that recurs towards all women arises from a few cultures that keep women non-educated and forcibly ghettoed. 'Perceive cosmically, think biospherically, feel historically, act locally' will be the motto of this multi-centred synergetic civilization.

The American frontier freedom-and-fun lovers landing on their own two feet wherever catapulted, the Lakota sundancer's vision quest and resolute identity, the Balinese daily achievements of beauty and community, the Tibetan sage's radiant continuity of phenomena, communication, and situation, the engaging French savant's *savoir faire* and *connaitre*, the Afghan Sufi's free-wheeling self-alchemy and poetry, the Huicholes' choreography and mystery, the Yoruban cool and passion and thousands of resplendent exemplars of humans-at-their-best exist as priceless ends in themselves. These lifestyles continue to be cherished and nurtured, but now vibrate their uniqueness to a planetary beat. Out of many, one.

This ethnosphere is now the patri-matrimony of all us humans. Fluid culture after fluid culture, permeable, evolving by stern competition with unleashed *Techné*, win ever-new cohorts by their free and easy ways. *Techné* cannot destroy the human constant and therefore new adepts continually spring forth. Humans grow ever more skilful to enjoy and defend their synergy.

¹⁴The annual Worldwatch Institute reports are forerunners of cyberspheric-type books that will give an accurate 'big picture'

¹⁵Vernadsky (1986) believed that only a noosphere could fully protect the biosphere from *Techné*

CONCLUSION

Necessity creates new organs of perception, so both experience and ancient wisdom tell us. With the meta-culture a new organ of perception is now available to all humans. More of us see the unity of aspiration and creativity underlying ethnic diversity. More of us morph about the planet in more cultural situations with more grace and less bumbling. More of us cannot be bought and sold and more work out flourishing ways to live. More of us form lively corporations, not to sell them out to exploiters after a good start-up, but to use these versatile inventions for beneficent aims in a relaxed market aiming only for profits compatible with sustainable ways of life. This competitive and co-operative system can gradually replace the armed states and bank-controlled corporations.

GLOSSARY

Biosphere — About 3.8–4.0 billion years ago, a sphere of life began to be formed around the geosphere, penetrating throughout the lithosphere, atmosphere and hydrosphere. Vernadsky (1986) considered this entire volume to be the biosphere. The biosphere's activities greatly affect the composition of water, rocks, and air, which in turn influence the evolution of the biosphere. *Back to text*

Cybersphere — The rapidly emerging penetration of fact and value-based feedbacks about what is happening on planet Earth and inner space throughout the ethnosphere, composed of artifacts and networks. *Back to text*

Ethnosphere — The planetary system of intercommunication between human cultures that the technosphere rendered not only possible, but also necessary. The ethnosphere or human value system and patterns of new behaviour penetrates throughout the previous planetary spheres. *Back to text*

Geosphere — While the earth is actually an oblate spheroid, the word *sphere* has been universally adapted to indicate its approximate geometry. Geologists consider that the geosphere has three external physical spheres: an atmosphere (of air), lithosphere (of rock), and hydrosphere (of water). *Back to text*

Memes — Units of behaviour including ideas, words, skills, and gestures, that operate in cultures much the way genes do in organisms. Memes are transmitted by instruction and imitation. *Back to text*

Noosphere — Vernadsky (1986) defined the noosphere as the planetary operation of human intelligence (ethnosphere and cybersphere) permeated by all knowledge of arts and sciences. The noosphere has not yet emerged, but since intelligence means the ability to achieve goals, the creation of such a sphere is the primary task facing humanity today. *Back to text*

Techne — One of the nine inspirational muses of Greek metaphysics. Used here as the personification of the genius of the technosphere who has tried to promote herself from the co-operative muse to a runaway goddess. *Back to text*

Technosphere — The sphere of human-made artifacts, including molecules, throughout the biosphere with the Agricultural Revolution. Today the technosphere, like the biosphere, penetrates throughout the upper spheres of the geosphere and affects the composition of all life forms. *Back to text*

Like antibodies, these multitudinous actions heighten human immunity to cancerous expansionism. Creating this fulfilling co-evolutionary meta-culture, a sky-fed reservoir of ways of life, restores the epic arc and poetic aura to us humans. It gives us a realistic way of life, processes in which our ethics, our esthetics, our epistemology, our cosmology, our dharma, our way, our zen, our *savoir faire*, our mana, our tao, our taragat, our science, our technics, our common sense can flower. Creating a working ethnosphere with *Techne* as its servant is humanity's grand opportunity and historic task.

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