

# A Story of the Utopian Vision of the World

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A map of the world that does not include Utopia is not worth glancing at, for it leaves out the country at which humanity is always landing.

OSCAR WILDE

The further ahead one looks, the more the vision of the distant future resembles the golden age of the mythical past.

JOHN COHEN

Being condemned (or chosen?) to be “the missing link” on its way to perfectibility (or redemption?) – half animal/half human – we always need in some way or another the transcendence of a Utopian Vision. It therefore comes as no surprise that most of the essays in this issue, reflecting a vision of the world today, are openly or covertly concerned with utopian expectations. Hence, it might be worthwhile to trace the origins and reflect in flashbacks – following the pioneering technique of the French film-maker Alain Resnais – a story of the Utopian Vision.

George Orwell (1970) described the Utopian Vision as “the dream of a just society which seems to haunt the human imagination ineradicably and in all ages, whether it is called the Kingdom of Heaven or the classless society, or whether it is thought of as a Golden Age, which once existed in the past and from which we have degenerated.” As a structure of the imagination it has barely changed in the last twenty-four and a half centuries. Are not all utopias of the past two and a half thousand years merely footnotes to Plato’s *Republic*?

No! Plato, in fact, comes in rather late: utopian themata reach back to the earliest Greek writings. From Hesiod’s *Works and Days* – of the early seventh century B.C.E. – came the canonical depiction of the Golden Age, the bitterly lamented vanished age of Kronos’ reign: when men “lived as if they were gods, their hearts free from

all sorrow, and without hard work or pain." Reworked by Virgil and Ovid as the lost age of Saturn (the Roman Kronos), the pastoral perfection of the Golden Age reappeared in the classic Arcadia, a time and place of rustic simplicity. Ovid's portrayal of the Arcadian idyll in Book One of the *Metamorphoses* is apparent in the anti-urban (and later anti-industrial) fantasies of scores of later writers up to our own time. Rousseau's *Discourse on the Origin of Inequality* was the stern Arcadian counterpart to the revels of French courtiers playing as shepherds and shepherdesses in the gardens of Versailles.

Montaigne, when setting his Arcadian vision against the classical utopian tradition of Plato, shows the fertility of invention in the ancient world that could both imagine the Golden Age and Arcadia as objects of human longing, and at the same time inaugurate an alternative, almost antithetical, tradition that was nevertheless equally utopian: the utopian project of the ideal city. An early Greek tradition already venerated the semimythical figures of Solon of Athens and Lycurgus of Sparta as the founders and lawgivers of their respective city states. Solon and Lycurgus were the prototypes of later utopian *nomothetai*: King Utopus in Sir Thomas More's *Utopia*, Sol in Campanella's *City of the Sun*, King Solamona in Bacon's *New Atlantis*.

It was of course through Plato's *Republic*, rediscovered along with other Greek writings in the European Renaissance, that the Hellenic ideal city most influenced western utopias. More saw his own *Utopia* as partly a continuation of the *Republic*, fulfilling Socrates' desire in the *Timaeus* to see the abstract Republic actualized. And four hundred years later H.G. Wells was still constructing his "modern utopia" according to Platonic example, and largely along Platonic lines. But in some ways the most direct Platonic influence was to be found in the architectural utopia, the most utopian of all the arts. How did Lewis Mumford put it? "The first utopia was the city itself." In the ambitious urban plans of Alberti, Filarete, Francesco di Giorgio, and Leonardo, the writings of the Roman architect Vitruvius were fused with Platonic conceptions to produce a physical replica of Plato's *Republic*, realized in stone. And Campanella's *City of the Sun* is divided into seven concentric circles, through which four broad streets radiate outward to the four gates from the temple at the center, the seat of all political and spiritual power. Campanella's extraordinary vision of the city as an incorporation of knowledge and science shows that the architectur-

al utopia aspired, in some ways, to outdo Plato himself. Something of this utopian belief has continued to haunt architects and planners to the present day. It is to be found in L'Enfant's plan, steeped in Enlightenment classicism and rationalism, for the new city of Washington, the capital of the new American nation: itself a revolutionary creation, a utopia. And it is explicit and extreme in Le Corbusier's writings and designs for "the city of tomorrow," *la ville radieuse*: perhaps the most utopian of all architectural schemes, and in its integrative and organic aspiration to create "a single society, united in belief and action," the most purely Platonic in spirit (Kumar, 1987; footnote 10 of chapter one).

### **In the beginning . . .**

A flashback to Judaism, with its abstract monotheistic ideals of belief and conduct, reveals that it was first subjected to Utopian reform by Jesus, the charismatic healer, exorcist, and popular teacher of the first century. The new commandments "love thy neighbor" and "love God" heralded the unification of such diverse cultic programs as the (Greek) brotherhood of mankind and the (Jewish) fatherhood of God. If the Old Testament is regarded as a preamble, then the New Testament may be the drama of redemption and fulfillment; this was indeed the vision of Origenes, a Church-father of the third century who conceived the utopian *historic continuity* of the two Testaments: the Old Testament made sense only as it prefigured Christianity (but this is not just an allegory). Without this interpretative transformation of the Old Testament, the entire history of Christianity would have been different in all respects, from the liturgical to the political. And the implication that the New Testament might be similarly transformed could be described as one cause of the Reformation (Kermode, 1979).

The Utopian concept of historic continuity remained a powerful undercurrent, culminating in social utopias of lasting anticipatory illumination. The most influential among them was that of the Calabrian monk Joachim di Fiore (around 1200). Joachim, a former Cistercian who had fled to the mountains of San Giovanni in Fiore, proclaimed that the progressive self-revelation of God occurs in three great stages: the first *status* is that of the Father, the second that of the Son, and the third and final that of the Spirit, i.e., the enlightenment of all in mystical democracy (a classless society

without masters or Church). Joachim was not formally a millenarian, and he was never denounced as a heretic by the Church; the doctrine he preached, however, was interpreted in a millenarian manner – that of the Eternal Evangel – and was developed by a long succession of followers, such as Thomas Müntzer and Tommaso Campanella.

Thanks to a recent publication by Marjorie Reeves and Warwick Gould (1987), we are now able to see the astonishing degree to which nineteenth century radical political and intellectual movements were permeated by strange transmutations of the prophecies of Joachim, and, even more extraordinary, by a blatant forgery of Joachim's work by a thirteenth century Franciscan monk, Gerard of Borgo San Donnino. In 1254 Gerard of Borgo proclaimed in Paris that the Old and New Testaments were alike abrogated and that all authority had passed to the third Testament, which he termed the Eternal Evangel, or Everlasting Gospel – a term taken from Revelations 14:6. In the following year Gerard de Borgo's book was burned while he was branded a heretic and condemned to perpetual imprisonment.

Joachim's depiction of the persons of the Trinity as not only theological but also historical realities was a hazardous but courageous innovation, flagrantly diminishing the position of Christ (Manuel & Manuel, 1979), and downgrading the Gospel to a prologue of an earthly state of perfection (in Joachim's own words) "in plenitudine intellectus," or in a hymn of the fourteenth-century Joachimite Telesphorus:

O vita vitalis, dulcis et amabilis, semper memorabilis (quoted by Bloch, 1959; p. 591).

It was the monks, the "spiritual men," who would be the leaders of this third and last *status*, since they were regarded as the true representatives of the Holy Ghost. It was following Joachim's prophecy that the Franciscan Spirituals of the thirteenth and fourteenth centuries rejected Pope, hierarchy, sacraments, the Scriptures, and all theology. They endeavored to live a Christian life of unconditional poverty and humility, and to transform the Church into a community of the Holy Spirit (Kumar, 1987). The various monastic orders and institutions, in effect, provided the framework within which the basic tension implicit in the structural pluralism of medieval Europe could be worked out. Thus, in a sense, Luther's dictum of opening up the monasteries and turning the whole

world into a monastery, did indeed find some very important antecedents in the dynamics of medieval monastic orders (the Cistercians, Clunians, and others), in heterodox movements, and the connections between them (Eisenstadt, 1990). Joachim was on the right track in choosing the monks as heralds and leaders of a new age; the monasteries added an institutional idea to the ideological strand of perfectibility and millenarism, which itself is a lasting contribution of Christianity to the Utopian Vision. Hence it is that Joachimite beliefs can be found in so many of the radical millenarian movements of medieval and early modern times: the Cathars, the Brethren of the Free Spirit, the Hussites, the Taborites, the Anabaptists, the Fifth Monarchists and other millenarian sects of the English Civil War. The millenium or the third *status* of the Holy Ghost promised a truly Christian dispensation of love, peace, and freedom, of life lived on this earth according to the precepts of the Sermon on the Mount. The concept of the millenium offered an intermediate term between the purely earthly existence of fallen man and the purely heavenly existence of man redeemed. It is a transcendence that links earth and heaven rather than separating them. It holds out the prospect of "heaven on earth" in paradisiac perfection, as proclaimed in the Lord's prayer: "Thy kingdom come, Thy will be done, on earth as it is in heaven" (Kumar, 1987, p. 17).

Let us not forget that the French Revolution had been preceded by waves of millenarian expectations and by mystical groups of *illuminés* and secret societies with their belief in an impending new revelation of the Spirit and, in some cases, a corresponding belief in a chosen elite destined to bring about the new age. Henri de Lubac, for instance, cites the example of the *Illuminés* of Avignon, who in 1779 had proclaimed the approach of a "nouveau regime" and believed the world to be on the edge of "les derniers temps du troisième âge" (Reeves & Gould, 1987; p. 43). A similar triadic pattern in history can be found in the ideas of Dom Deschamps, a contemporary French Benedictine, and de Maistre. In Northern Europe as early as 1757 Emanuel Swedenborg had already proclaimed the dawning of a new age, and William Blake, born in the same year, composed his own *Everlasting Gospel* in 1818. Clearly, Joachim's "Eternal Evangel" had been preserved by a tradition of illuminati who handed its secrets down from generation to generation until the time was ripe. The eighteenth-century revolutionary ideals had similar tripartite historical schemata and provided a fertile soil for the rediscovery of Joachimite ideas in the nineteenth

century. Joachim di Fiore's three ages reappeared in Condorcet's succession of historical epochs, the three ages of Comtean Positivism, and a host of nineteenth-century evolutionary schemes. But it was Lessing who made the first undisputable reference to Joachim in his book *On The Education of the Human Race* (1780), transforming a condemned heresy of the thirteenth century into a symbol of future hope (Prickett, 1988). Michelet was also fascinated by Joachim's ideas, and his researches were taken up by Quinet, Renan, and George Sand. Joachim's influence can also be found in George Eliot, Havelock Ellis, Walter Pater, Wilde, Joyce, Lawrence, Mazzini, Fichte, Schelling, Hegel, Ibsen, Dostoyevski, and Berdjaev, to name but a few.

One can easily detect in the texts of the young Engels the tonal quality of Joachim – already a few years prior to the Communist Manifesto – when he mentions the “holy war to be followed” by a “tausendjähriges Reich der Freiheit.”

Utopian Vision is a hallucinatory mythic vision with biological roots in our intentionality and the way we perceptually/conceptually create realities that are based on expectations rooted in the remembrance of things past. Mythic thinking also underlies Marx's view of history. Behind Marx's economic determinism one can glimpse the messianic martyr-savior's part played by the proletariat. In the world view of the young Marx especially, the proletariat suffers the fate and assumes the task of Christ. Today the proletariat is the scapegoat of humanity; tomorrow it will be its redeemer, so runs the Marxist myth. And Sokel (1983) observes that Gregor Samsa – in Franz Kafka's *Metamorphosis* – plays the same role that the proletariat, in Marx's vision, performs in the universal society of the bourgeois-capitalist system.

### **On Neurophysiological, Prophetic, and Hermeneutic Aspects of the Utopian Dream**

In order to walk upright, (explains Ernst Bloch in *Das Prinzip Hoffnung*) we require “guiding images” that enable us to become proper human beings; we need a comprehensive vision of what it is (and what it can be) to be a human being. There has to be – according to Bloch – an interior image, an identity that informs human endeavor, for it is “precisely because human beings as such are still undefined that they need a cross between a mirror and a painted picture when they look inside” (1959, Vol. III, p. 931).

In effect, we do have such a hybrid instrument; it is an organ that developed in the human forehead during the transition from Neanderthal to Cro-Magnon man: from a low brow to a high brow. It is called the "prefrontal cortex." And Paul D. MacLean (1982) goes on to say:

The prefrontal cortex appears to be the only neocortex that looks inward to the inside world. Significantly, it establishes connections with the third great subdivision of the limbic system concerned with parental care and play. Clinically, there is evidence that the prefrontal cortex by looking inward, so to speak, obtains the gut feeling required for identifying with another individual. It is this new development that makes possible the insight required for the foresight to plan for the needs of others as well as the self – to use our knowledge to alleviate suffering everywhere.

That pre-form of utopian altruism is also the key element in the development of mental functions in general: the making (up) of one's mind by "a brain that develops by experiencing itself" (Ey, 1965). This key element is the social, interpersonal connection and its transformation into an interpersonal one. Speech is not yet available to the infant: the mind is not in the head (Fischer, 1990) but in the parallel distributed connectionist network of family and society. Only when speech and practical (overt) activity come together for coordination through "guided participation" (Rogoff, 1990) does the infant's brain start to develop its own mind, but not for long. As soon as the child is "brainwashed," that is, educated, its mind becomes part of the connectionist network of society.

What happens when children are not 'brain-washed' by adults of their own species? The March 1991 issue of the *Scientific American* recollects the story now 50 years old, of "the two wolf children of India" who were first seen living as wolves among wolves on October 9, 1920, by an Anglican missionary, Rev. J.A.L. Singh. Rev. Singh and his wife expected that a few years of association with the normal children in their orphanage would change the wolf-children from effective little animals back into human beings. They were to be disappointed. "The children hated, feared, and shunned human beings, as would have a wolf-cub. Kamala, the elder surviving girl, gradually developed into a pathetic little, sub-normal, but clearly not idiotic, human being. She learned to speak about 50 words and occasionally put them in short sentences." From the entire account it becomes clear that normal babies of mammals are born with the potentialities to become an adult expression of their

species only by being built into the connectionist network of that society in their very earliest years.

What makes us human are concepts that are gradually acquired by sharing a common life experience. These concepts, like hope, cunning, hypocrisy, and so forth, are, in the first place, meaningless sound images for the child. But gradually, as the child develops, environmental influences modify the strength of inter-unit connection to facilitate categorization. In the end, the connectionist repertoire of acquired experiences constitutes the system's, or society's, mind. All concepts, in effect, all higher mental functions, are internalized social relationships: internalized by the developing infant through language (Fischer, 1990). As Wittgenstein remarked, "bit by bit daily life becomes such that there is a place for hope in it." What holds for hope holds for the concept of hope – including the concept of utopian hope. The child possesses it when he can talk of it (Sharpe, 1991).

When we apply the theory of spontaneous organization by complexity from noise to the acquisition of language, nondirected learning can be thought of as a process of complexification with decrease in the initial redundancy. By this process new meanings are created by and within the cognitive system itself. What really makes the meaning of things and words in nonformal language is precisely their polysemic nature (Atlan, 1989).

What is equally remarkable, however, is the impossibility of determining whether the retained memories of the connectionist repertoire are fictions or the representations of real events. Don Quixote was confronted by a similar dilemma when asked by the Duquesa whether Dulcinea was real or only a figment of his imagination. He replied: "These are not matters which lend themselves to unequivocal verification." Don Quixote gave the very same answer as Freud did when pondering "whether the primal scene" – in his patient's case – "was a fantasy or a real experience": "the answer to this question is not, as a matter of fact, of very great importance" (Freud, 1973, p. 260). It appears, then, that we constitute ourselves between fiction and nonfiction. While fiction may reflect a veiled "autobiography" of the conscious mind, the quasi-symmetrical relationship between reality and fiction implicates both the structure of the human brain and its mind as processes, and humanity as a structure of the stories that the mind tells itself about itself (Fischer, 1987).

Let us return once more to the theme of optimistic hope about



history. Newton (1642–1727), for example, worked out a dictionary of historical, political and ecclesiastical equivalents for the images and symbols in prophetic literature. His presumption was that prophecies were congruent in all their parts, without fault or exception. Once an appropriate political translation of any given “prophetic hieroglyph” (the phrase is Newton’s) had been determined, the same meaning had to apply whenever it appeared in a book of prophecy. The tests of truth were constancy and consistency. Newton showed not only that every notable political and religious occurrence in history had been foretold in some vision of prophecy, if correctly understood, but that his set of equivalents had totally exhausted the possible meaning of each of the objects and images appearing in any prophetic verse. There were none left over, no random words still unexplained, no superfluous images. The system was closed, complete, and flawless (Manuel, 1968; pp. 361–380).

At the end of the seventeenth century the Bollandist, Daniel Papebroch – a forward-looking scholar – could still take Joachim’s prophecies seriously. The reason was undoubtedly his sense of involvement in the divine purposes of history inherited from the medieval tradition. Perhaps, comments Reeves (1969, p. 508), the Middle Ages truly came to an end only when intelligent and educated men ceased to take prophecy seriously. Her contention is that this change hinges on a change in our whole attitude to history and to our participation in it.

Using suspicion and hope, Ricoeur (1981) develops a hermeneutic (interpretative) approach that avoids both credulity and skepticism. For Ricoeur, hermeneutics is always about understanding oneself “in front of” the text. In biblical parables, for example, he finds a tension between the narrative form of discourse and the way this form of discourse is transgressed by the intrusion of the extraordinary, an intrusion that dislocates the logic of the narrative. By means of this tension a “world” is projected “in front of” the parable text, a “world” that constitutes the referent of the parable (White, 1991). This process opens the parable to its ultimate referent: the relation between the self and a transcended self as expressed in the utopian image “the Kingdom of God.” To summarize Ricoeur’s version of the hermeneutic circle: one has to believe in order to be able to understand, and one has to understand in order to be able to believe.

Ricoeur recognizes that all symbols conceal phantasms or projec-

tions of inordinate fear and desire. In Ricoeur's hermeneutic, utopian hope that affirms the life-giving power of symbols is matched by a suspicion that exposes the false consciousness these symbols conceal. Prompted by a hope that embraces suspicion, Ricoeur wagers that "beyond the wastelands of critical thought, we seek to be challenged anew. But we can never leave the wasteland completely behind; the wasteland is the last constraint on the desire for transcendence, the source of renewed fear, hope and renewed utopian dreams and expectations . . ."

Both the utopian anticipatory illumination and the "real" exist within phenomenological categories and present themselves to us via ideological deformation. Both are, in this respect, shadows of an absence cast over a misleading perception of a presence (Finkelstein, 1989).

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Utopias are not universal. They appear only in societies with the classical and Christian heritage, that is, only in the West. Other societies have their paradises, primitivist myths of a Golden Age of justice and equality, Land of Milk-and-Honey fantasies, even messianic beliefs, but they do not have utopias. The modern utopia was invented by a Christian martyr, Sir Thomas More, later canonized by the Catholic Church. More's Christian piety was in many respects matched by that of the two other great early utopian thinkers, Campanella and Andreae, both of whom passed their entire lives as priests and preachers. Even the "pansophic" utopias of Bacon, Comenius, and Leibniz, with their stress on science, were conceived within the framework of Christian philosophy: science was the means to both a better knowledge of God and the creation of a truly Christian society. The title of Andreae's utopia, *Christianopolis*, sums up well the evident goal of all the principal utopian thinkers to the end of the seventeenth century: the ideal Christian commonwealth, a Christian utopia. Without the hope that religion ultimately offers, without the paradisiac and millennial expectations that Christianity inspires, it may be that utopia becomes a lifeless shell. Religion is, in this sense, the "unconscious of utopia," the subterranean source of much of its emotional force and dynamism.

Socialism has been the last utopia to date. No other comprehensive social vision has emerged as contender; no other utopia has emerged to substitute for it. It was this that made Karl Mannheim

fear that Western Society had approached a situation "in which the utopian element . . . has completely . . . annihilated itself" (Mannheim, 1960; p. 225).

### **From Utopia to Anti-Utopia and Science Fiction**

There is no way of prognosticating whether this night of the utopia will be long or short or whether the utopian propensity, which has given birth to hundreds of works in all European societies since the mid-fifteenth century, is drying up.

The twilight state of utopia has been, of course, anti-utopia's opportunity. Anti-utopias such as *Brave New World* and *Nineteen Eighty-Four* not only dominated their own times but have continued to attract a considerable following in our time. Huxley's and Orwell's outlook on the modern world can readily accommodate many of the social developments of the postwar decades. Nevertheless, the anti-utopia too has faltered, as our continuing reliance on Zamyatin, Huxley, and Orwell itself suggests. Vonnegut's *Player Piano*, David Karp's *One*, a totalitarian nightmare, and Burgess's *A Clockwork Orange* have continued the tradition. But no anti-utopia since *Nineteen Eight-Four* has truly captured the popular imagination or become the center of public debate. Without utopia's power to inspire hope with its vision of a heaven on earth, anti-utopia loses its corresponding function as the mocker of those hopes and the adversary of that vision with its own evocation of an earthly hell (Kumar, 1987; pp. 422–3).

Utopia survived among small pockets of utopian missionaries, but they preached to largely unhearing ears. No work of the utopian imagination appeared that caught the public fancy as had the utopias of Bellamy, Morris, and Wells at the turn of the century. Neither Olaf Stapledon's original utopia, *Last and First Men* (1930), or its successor *Star Maker* (1937), found a large and receptive audience. C.S. Lewis paid them the compliment of attacking their rationalist outlook in some of his best science fiction, and science fiction writers such as Arthur C. Clarke and James Blish acknowledged their debt to Stapledon's ideas. But his books were largely ignored and quickly forgotten.

There remained the courageous H.G. Wells, who persisted boldly in holding aloft the utopian banner. Work after work streamed from his pen, with increasing urgency pressing the case for a new world order under a world government. In 1940 he worked with a

distinguished team of scientists and intellectuals in the framing of a "Declaration of Human Rights" but did not live long enough to see its adoption by the United Nations General Assembly in 1948. It was one of the Greatest utopian accomplishments!

The utopian dreams of the 1960s were embedded in a cloud of technological optimism. The fight against the abuses of technology was fought with the electronic technology of television and hi-fi; it was an essential part of the counter-culture. Arthur C. Clarke's script for Stanley Kubrick's film *2001: A Space Odyssey* took the optimistic message of a cosmic purpose to an ever wider audience. And Robert Heinlein's *Stranger in a Strange Land* (1961) won a cult following in the counter-culture for its genial espousal of free love and its philosophy of mystic liberation (Kumar, 1987, p. 403). In Ray Bradbury's *Fahrenheit 451* (1953), books are burned by the state and literacy is on the verge of disappearing; this satire on the mass media foreshadowed the grimmer tone of the 1960s, as sounded by the New Wave writer J.G. Ballard: "The only true alien planet is Earth." Journals and groups sprang up on both sides of the Atlantic to spread an ecological message. In the U.S. it was *Co-Evolution Quarterly*, the *Whole Earth Catalog*, and *Mother Earth News*; in Britain it was *The Ecologist*.

Pre-industrial society was also a living source of ideas and institutions in the vision of Ivan Illich, the nonconformist Catholic priest who in a series of short, vivid and wide-ranging tracts – *Deschooling Society* (1971), *Tools for Conviviality* (1973), *Medical Nemesis* (1975) – sketched the broad outlines of a community that restores meaning and satisfaction in work to its members.

St. Augustin remarked once, a very long time ago: "Not everything we make up is a lie"; a fiction may be *figura veritatis*, a figure of the truth. In fact, the satirical socio-critical science fiction, from Wells, Vonnegut, and Gibson to Lem – with their "new maps of hell" – reminds Suvin (1988) that utopia, science fiction, and satire are really two sides of the same coin. These "estranged literary genres" seem all to have originated in tales connected with the Saturnalia – that extraordinary time of the year when sexual, political, and ideological roles were all reversed, when glimpses of new and radically different existential possibilities were allowed to appear as a vent in the supercharged atmosphere of rigid class society.

The fictitious nature of utopia and science fiction brings up the question of whether utopia can be realized. There are two opposed,

but equally dogmatic, schools of thought about this. For the first, or Mannheimian, school, only that which is realizable should properly be called utopia (the opposite is called ideology); for the second, which strangely fuses liberal pragmatism and nineteenth-century Marxism (for example, Engels), only that which is unrealizable should be called utopia (the opposite is called reality or science). However, if utopia is neither prophecy nor escapism, it should, as some critics have remarked, be treated as an "as if," a "methodical organ for the New" (Bloch, 1959; p. 180). Utopia is a heuristic or educational device for perfectibility, an epistemological model, a *figura veritatis* and not an ontological reality. These "estranged literary genres" stand for a hallucinatory cognitive model.

It should be emphasized at this juncture that the dream of a utopian country is only one of a limited number of plots or scripts that are constantly rewritten, repainted, and recomposed for each generation. The *themata* consist largely of wish-fulfilling self-interpretations that are the warp and woof of narrative fiction. These scripts or scenarios illustrate the limited and repetitive nature of the human interpretive repertoire, the content of conscious states, derived from a limited number of basic conflicts, paradoxes, and predicaments inherent in the human condition; they reflect *expectations* that are based on philogenetically and ontogenetically learned past experience (Fischer, 1986; pp. 22–23).

One example of these *themata* or scripts is given in the involvement of the gods in the web of their own creation (self-reproduction), so that they become the victims of their creatures, entangled in a net of not quite voluntary self-manifestations. In *Fiasco*, Stanislaw Lem has unwittingly rewritten this myth in the light of von Neumann's postulate that it is possible, at least in principle, to build self-reproducing machines that have descriptions of themselves and "construction arms" for acquiring and assembling the spare parts of their "environment" – all under the control of a computer. Space explorers searching for life happen upon a Saturn-like planet, the rings of which turn out to be composed of attack satellites and anti-missile weapons. This hardware was originally a "star wars" defense shield against land-based nuclear attack. As each side learned to jam the operations of the other's technology, more and more autonomous control was given to the satellites. Since material was difficult to transport into space, the satellites were designed to be self-reproducing. The ring evolved and developed into an ecosystem of hostile, autonomous organisms beyond

the control of the parent planet. Unfortunately, in view of modern developments, this scenario is all too believable, comment Farmer & Belin (1992; p. 828).

### The Utopian Realm of Virtual Reality

In order to account for mental functions, psychological theory has always been dominated by metaphors drawn from the high technology of the day. Such *metaphorical transfer* became, more often than not, the cornerstone of theoretical innovation. Indeed, Marshall (1977) claims that the mind, for example, has been conceived as a machine since at least 430 B.C.E.

Recently the metaphors of high technology have become more abstract and mathematical; much attention is now paid to the contemporary treatment of non-linear differential equations, including catastrophe theory, bifurcation theory, Poincaré maps, strange attractors, chaos, and fractals. One particular metaphoric transfer – a utopian one – models, simulates, or mimics reality as a virtual domain. It started with Ivan E. Sutherland, who, in the 1960s, while working at Harvard and the University of Utah, conceived *Sorcerer's Apprentice*, which models the most subjective mind functions of the brain: reality testing (Fischer, 1981). *Sorcerer's Apprentice* was also the topic of a doctoral dissertation by Donald Lee Vickers (University of Utah, Department of Electrical Engineering & Computer Science, December 1972). Since then miniature cathode-ray tubes were replaced by lightweight liquid crystal monitors and electronic sensors, and the most advanced systems – at the Ames Research Center of NASA – not only create virtual realities but also replace one reality with another. *Dataglove*, developed by VPL Research Inc., a small California company, translates head and finger movements into electrical signals. In conjunction with a helmet developed by Ames Research Center, it is hoped that *Dataglove* will enable a robot *outside* a space station to carry out complex maneuvers and repairs by mimicking the hand movements of an astronaut *inside* the station.

*Dataglove*, in effect, can add a tactile element to systems that cannot ordinarily be touched – that is, experienced spatially. Imagine being able to feel the topography of an enzyme molecule: its crevices, its active site – and to feel the pull of the interatomic forces that join substrate and active site (Foley, 1987)!

Since icons can evoke mental images (of tactile experiences),

what is the difference, if any, between the “real” Virgin Mary, or a Saint, and their iconic counterparts in virtual space? Both evoke the same mental image in the *a priori* constructed space of the right cerebral hemisphere (in most right-handed people). Is the difference between a real person and his/her iconic presentation isomorphic – the same as the difference between making love with a real person and making love with his or her mental image?

Note, in this context, that electromyographic activity in striated (voluntary) muscles may be elicited and registered irrespective of whether the willed motor activity is actually performed or is merely experienced in cognitive space or imagination (McGuigan, 1978). Moreover, there is continuous transformation between external and internal spaces, a functional continuity of physical and imagined space (Attneave and Pierce, 1978). Mental activities hence may be “thought of” as muscular acts – consciousness being the domain of internalized motion (Fischer, 1986). Perception is then the incorporation and creative transformation of external information into the nervous system by movements into the world. Locomotion by voluntary goal-directed muscular coordination is the key to 3-D visual perception (Freeman, 1987).

But “things” other than cave paintings and icons can also evoke mental images! Jerison (1976) conceives language as merely an expression of another neural contribution to the construction of mental images, analogous to the contribution of the encephalized sensory systems and their associated systems. Jerison contends we need language more to tell stories than to direct actions. Fictitious and utopian storytelling creates mental images in our listeners that should be as real, in a fundamental sense, as the immediately experienced world “out there.” Both are constructions of the brain and mind. In hearing or reading the words of another, we literally share the reality of another consciousness (just as hypnotist and hypnotized do). Paul Valéry has already noted this in his “*Essai sur Stéphane Mallarmé*” (1898), observing that a poem is a sequence of verbal events transformed by the reader into a succession of mental occurrences.

The symmetry, and thus identity, of a mental image induced by the perception of a real person with a mental image evoked by the iconic representation of that person is a concept brought forward by John Damascenus and Theodorus Studita during the *εικων* dispute that led to the split between the Eastern and Western Church. Both bolstered their iconoduly (icon-friendly) stance with theologi-

cal arguments; and so did their iconoclastic adversary, led by Constantin V., who was joined in his imperial palace in Hieria by 338 bishops when he forbade the veneration of icons in 754 C.E. (Brock, 1988). The main reason for this decision was to break the growing influence of the monks. Well-organized communities of monks, by administering the icons, cultic images, and relics to which a variety of miraculous powers were ascribed, were competing for control with the Emperor; hence the authority of the monks had to be curbed by forbidding the veneration of icons. The antecedents of the icon debate go back at least as far as 160 C.E., when Tertullian, in his "De idolatria," attacked the veneration of idols.

The icon debate of the eighth century may not be settled for a very long time to come. Is virtual reality a model of the "real," a word that was coined in the thirteenth century to signify "having properties" from the point of view of observers (Peirce, 1958; p. 358)? Is the mind a system of models, and can the real nature of the model always be distinguished from the model nature of reality? What is the essential difference between real and virtual spaces? These and related questions are basically the old questions of the still unsettled icon debate. What is space, after all? From the geometric perspective of general relativity, matter is defined as a property of space, and space as a property of matter.

But from the biological point of view, sensory impulses carry no information about the character, or even the existence, of a material object or event in space; nerve impulses indicate only momentary perturbations. Information, therefore, is a creation of the observer, a projection of his/her own notion of purpose into the observed (Fischer, 1991).

It appears then that the thirteenth-century definition of the "real" may be amended by stating that real is that which has properties symmetrical or isomorphic with the properties present in the observer's organization. The creature looks into the mirror of his/her perception of the world that reflects the organization of the creature. It is along these lines, we believe, that the basic question of the icon debate, about the difference between the real and the virtual, should be re-examined.

### **Utopia Now**

Utopia has, during the past four centuries, expressed humanity's belief in progress and the feasibility of improving the human con-



dition. Such utopian belief appears to us, in the “now,” as illusory, an impossible dream. Originally, utopian desires and dreams had religious, that is, transcendental, foundations and were projected into immeasurably distant imaginary spaces. But as time went on, the distance of these faraway places in the “nowhere” started to shrink, and utopian imagination came closer and closer to the real spaces in the here and now. Ultimately, utopia transformed itself into science fiction and “applied science fiction” that mimics a world around us as virtual reality. “For the cyberpunks . . . technology is visceral, . . . pervasive and utterly intimate; not outside us but . . . under our skin” (quoted from *A Whole Earth Catalog*, 1988; p. 181). Departing from distant, untouchable, fictitious places, utopia at last arrived at the virtual reality of “cyberspace” – and this is the end of utopia.

But utopia did not die. It was taken over painlessly by dynamic developments in science and technology. The volume required to amplify or switch a single signal dropped from the size of a fist in 1940, to that of a thumb in 1950, to a pencil eraser in 1960, to a salt grain in 1970, to a small bacterium in 1980 (Moravec, 1989; p. 194). A century ago information traveled at the same speed as its human companions. Today it ascends toward incomprehensible gigabit-per-second, where a single bit traveling at the speed of light is but a few centimeters in length in the virtual world of information (Lucky, 1991). We have another ancient dream, continues Lucky, an executive director of research at AT&T Bell Laboratories, “the desire to be something we are not”; and he wonders whether we can “join electronically in creative ways with our fellows to achieve a collective wisdom that *transcends* the individual” (our emphasis). Is this not another utopian dream, but in the here and now?

Circumventing evolution and making artificial life (A-life) could be one way of fulfilling the desire to be “something we are not.” For Langton (1990), the organizer of the 2nd workshop on A-life, evolution drives living systems to a critical point halfway between stasis and change, that is, “at the edge of chaos.” Such a critical point exists in von Neumann’s cellular automata. These two-dimensional dynamical systems cannot preserve order (in the information-theoretic sense); they mimic life by maintaining some ordered structures but exhibiting perpetual novelty as well. In Langton’s view, living systems can be modeled as a particular class of cellular automata, poised “on the edge of chaos” (Belew, 1991).

Is there a distance between A-life and the Universe? For Gilbert

Keith Chesterton, "The Cosmos is about the smallest hole that a man can hide his head in." Accordingly, the cosmologists Barrow and Tipler (1986; p. 14) are pondering the utopian implications, for physics, of the requirement that "life" never become extinct. Paradoxically, this Final Anthropic Principle leads to definite, testable predictions about the global structure of the Universe, since indefinite survival in a closed (finite but unbounded) universe means survival in a high-energy environment near the final singularity; it also leads to some predictions in high-energy particle physics. Barrow and Tipler (*ibid.*, p. 674–677), in effect, propose that, ultimately, life exists in order to prevent the universe from destroying itself! Life begins its expansion from a single planet, and the information and material under the control of life will continue to increase until life has encompassed the entire universe and regulated all matter contained therein. If life evolves in all of the many universes in a quantum cosmology, and if life continues to exist in all of these universes, then *all* of these universes, which include *all* possible histories among them, will approach the Omega Point. At the instant the Omega Point is reached, life will have gained control of *all* matter and forces, not only in a single universe but in all universes whose existence is logically possible; life will have spread into *all* spatial regions in all universes that could logically exist, and will have stored an infinite amount of information, including *all* bits of knowledge that are logically possible to know. "And this is the end," with which Barrow and Tipler end their masterly exposition of anthropic physics that postulates that the physical world must be such as to permit the observer's physical existence as an intelligent being. It is for yet unborn intelligent observers to judge the utopian, scientific, and narrative merits of this monumental book; this may turn out to be a difficult task since one of the symptoms of the "postmodern condition" is that the boundaries between the genres of philosophy, science, fiction, and science fiction are deliberately blurred.

Is the complete control of matter, information, and knowledge in all regions of all universes another recurring scenario or repetitive script, a postmodern reinterpretation of Joachim de Fiore's utopian vision of the third Testament: an enlightenment of all in mystical democracy?

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