

12. An Enneagram of Crisis

"Where have we come from and where are we going?" is the question of every intelligence becoming aware of itself. Like every living being, we feel the force of history, the inexorable march of events, which drives us along, willy-nilly. Events on a vastly greater scale than that of our own lives shape our ends. Our own actions are encompassed by a design that emerges in the world process. Yet, on the scale of the biosphere within which we exist, collective human power has become a major factor. An individual, awakening to the situation, can find his greatest danger in the collective mass of humanity. This chaotic totality of more than five billion entities intervenes between ourselves and the greater cosmos.

When the pioneers of the Biosphere 2 project in Arizona – an attempt to mirror the complexity of the biosphere on a relatively minute scale within a few enclosed acres – asked one of their Russian precursors, Professor Joseph Gitelson, for some guiding thoughts, he replied: "Have courage – and remember that man is the most unstable part of the biosphere." We can also quote the anonymous humorist who said: "Humans are just God's attempt to pass the Turing test." (The Turing test is the test that can determine whether a machine is intelligent.)

Rise of the Technosphere

LET US TURN to the larger scale of things and focus on the biosphere and the *arising of humanity* within it. With the enneagram as our lens we bring focus what is significant. What we see depends on the settings we choose, and in particular the choice of the three octaves. Different choices will bring into focus different aspects of the whole. This capacity to be adjusted is inherent in the enneagram and is similar to what we find in a telescope, microscope, or camera. We can make adjustments according to what we want to focus on. We can do little more here than sketch out the situation, but we will still arrive at a *vision* of the *whole*. Work with the enneagram proceeds by *progressive approximation*. The symbol enables us to bring together all of the important elements. No matter how crude our first attempt is, it will contain most of what is significant and will point

us forward to better approximations. With the biosphere, my first approach will be to consider which three octaves sum up the present situation and our place in it.

There is no guarantee whatsoever that human life on earth will progress. Human destiny and, hence, the destiny of the biosphere, in other worlds beyond the earth is not assured. The impact we are having on the biosphere has engendered a sense of crisis. I will center our perspective on this. There is an early history of the biosphere, before man, and a possible future of the biosphere, which may lead beyond man. We thus place the role of mankind in the *second octave*.

The working of the biosphere, which has gone on for at least 3.8 billion years before humans appeared, constitutes the *first octave*. Nearly all the material and energy available to us now derives from this working. Going back to our most simple example of pouring a glass of water, we can picture the biosphere as a flow which is being gathered and concentrated in a glass. The glass is humankind. The material and energy generated by the biosphere is increasingly being diverted into the human realm, bypassing the recycling loops that keep complex ecosystems alive. As a consequence, many species are being eliminated. Humans did have considerable impact on their environment thousands of years ago, but only in the present era has our impact attained global significance.¹ This is because technology has magnified and multiplied our effect on the environment. We need to take account of the rise of technology within the biosphere as part of the second octave.

Point 3 of the enneagram will mark the beginning of this human disturbance of the global ecosystem. Point 6 will then signify the beginning of a *resolution* of this problem. The region beyond point 6 is that of harmonious reconciliation. This may be occupied by a new type of "knowledgeable mind," which some have called the *noosphere*.

As we might expect, the bare idea of a sphere of mind has given rise to as many interpretations as there are of man's origins and purpose. All of these interpretations are part of the noosphere: the noosphere has to interpret itself in diverse ways. It is not at all like a thing, but is, so to say, on the other side to all our concepts, beyond the empirical world. If the noosphere has a substance to it, then it is the substance of *intelligence*, which is not to be identified with mind. Most interpretations agree that a certain threshold of global significance must be

passed if there is to be a noosphere. In this sense, almost all that is encapsulated in our various cultures and traditions hardly foots the bill.²

It is an old idea that intelligence touched the earth and gave rise to life and the mind that seeks to communicate with intelligence. In this perspective, the arising of a noosphere is completing the circle. We might expect the transition to mind, or humankind, to mark a dramatic moment in the history of the earth.

Alfred North Wallace, who arrived at the principles of organic evolution at about the same time as Darwin, persistently argued that human evolution should be treated differently from that of other species. This stems from the basic insight that, with humans, evolution took another turn, acquired another method. This new dimension is *culture*. In the language of the materialistic biologist Richard Dawkins, culture consists of "memes," which correspond to the genes that are the crucial ingredients of organic evolution. Memes are the particles of culture which combine, mutate, and propagate themselves through institutions and communities.³

The crucial step in human evolution is often taken to be the emergence of language (that is, language as we know it today). It enabled people to share information in an abstract, symbolic way. One person could find something out and pass that on to others. This made it possible to accumulate and transmit information over generations. According to prehistorians such as Marshack, this then made it possible for social structures and innovations like agriculture to arise.⁴ It was the accelerating trigger of all technology and discovery.

Naturally enough, the vast majority of scientists want to regard language as arising gradually, imperceptibly, and haphazardly over countless generations. Those with a religious or spiritual orientation want to regard it as a gift of the gods, or, even, a satanic intervention that ruined the human soul!⁵ Finding the connection between culture and genetics is the central problem. It develops through different, though related, modes of evolution. Once mind, culture, and language exist, they become self-referential. We can only explore them using our own mind, culture, and language. We cannot step outside ourselves to look in and see the border between the organic and the mental.

We have no clear and agreed-upon evidence of the sequence of species participating in human evolution. What makes us human is something we know from the inside, not the outside. Evidence of works of art and early notations have led many people to regard a period about forty thousand years ago as the

most important evolutionary transition toward modern man. But focusing on such a period shouldn't distract us from seeing how it was made possible by previous steps. The principles of self-organization show that there can be quite abrupt transitions between one level of organization and another. It doesn't happen bit by bit. In fact, it cannot happen like that. This is important for looking at the emergence of language. We need not go to the interesting extremes that Bennett did when he argued that language was inculcated into the human race by superhuman magicians.⁶

Bennett argued that language in its main groups recognized today goes back to circa 10,000 before the present. Recent studies have suggested that there were earlier language groups, such as Nostratic, dating back more than fifteen thousand years, and protolanguages reaching back at least one hundred thousand years to the original sapiens coming out of Africa. The crucial step we look for is more radical than that proposed by Julian Jaynes in his theory of the arising of the modern type of self-consciousness three thousand years ago.⁷

Wallace was right in arguing that something radically new and different entered with human evolution. This was no more and no less than the creation of a new world on the earth. It is what the philosopher Karl Popper calls World 3.⁸ World 3 is the world of *intentional objects* such as pieces of music, buildings, theories, and so on. World 2 is the world of subjective experience, and World 1 is the world of things. Sometimes World 3 can also be called the world of *meanings*. Do not make the mistake of thinking that this world is composed of people's states or emotions, even though emotion may be necessary to make contact with it. It is not just subjective and is governed by its own kind of laws. The emergence of World 3 brought different rules of process into action. Gurdjieff was aware of the implications of this world and considered it to be a subset of the universal world of impressions. He says: "Neither food nor air can be changed. But impressions, that is, the quality of impressions available to man, are not subject to any cosmic law" (ISM, p. 321).

The emergence of World 3 enabled life on earth to tap into open-ended information processing. This means that human beings became creative in a way that is independent from life as it had been operating up until then. It led to the formation of technics. Technics are the systems of information processing, which exert control over transformations of matter and energy. Gradually a whole new

environment became established on the earth, interpenetrating and coexisting with the organic-material one.

Technics have emerged naturally in the course of evolution. Wasps build nests, ants organize raiding parties and cultivate fungi, and so on. Technology—the aggregation and organization of technics—is not artificial but is an inevitable outcome of the evolution of life. During the course of natural evolution technics arise as by-products of the interplay between matter and energy. It is when they acquire consciousness, or a degree of freedom peculiar to themselves, that acceleration begins. When technics can be manipulated in their own right, when people *become aware* of World 3, the rules of the game of evolution change. This is the probable evolutionary significance of consciousness.⁹

Semidetached from the already existing processes of organic life, technics are autocatalytic: that is, they induce their own production. Technics use information to gain control over the natural flux of matter and energy. Any gain of control releases further information, which increases the capacity to control. There is a positive feedback loop. With such geometric growth comes increasing instability and the emergence of new forms of self-organization. The American historian Lewis Mumford argues that technology has become a megamachine proceeding under its own steam, almost independent of human initiative. This is the picture of technology as out of control. In *Man and Technics*, Spengler describes the inevitable drive toward increasing complexity in human life. Every creative step aimed at solving problems simply exacerbates the crisis. When language developed to the point where plans could be formulated, a radical division emerged between those who make plans and those who carry them out. Social classes, based on information hierarchies, were born. This made society more complex but enabled specialization to advance. Specialization led to the emergence of cities and accelerating human control over the environment, which, in its turn, led to the inevitable expansion and intensification of warfare, when it became possible for wealth to be accumulated.

We have now reached the point where an autonomous technosphere exists which interpenetrates the biosphere. Spengler points out that there is no culture on earth capable of encompassing the forces embodied in the technosphere. Today this technosphere is fueled by the West (including those "Western" nations which are in the Far East). It creates stress between the so-called developed and undeveloped nations. Even within developed nations there is a rift between those

who remain at the level of superstition and magic and those who have an understanding of science and technology.

Our present-day cultures are like dream worlds, and it is a very big thing to awaken from these dreams to find the objective world. Cultures—and, indeed, the whole second octave of our biospheric enneagram—are fueled by *imagination*. Imagination is both a way of accessing higher worlds and a source of self-imposed bondage in delusion. It is a power that enables us to do remarkable things in the material world, but there is a cost and a risk.

Technology is now studied as if it were made of species emerging and struggling for survival within the ecology of human economics. This was first explored by Samuel Butler in the late nineteenth century. Anything complex enough begins to act organically, having no rhyme or reason other than its own perpetuation; that is, it becomes autonomic. You can look at so-called human artifacts as parasites on the human population equivalent to domesticated animals. It now appears that domestication was at least as much a strategic survival move on the part of those species as it was an innovative step on the part of humankind.

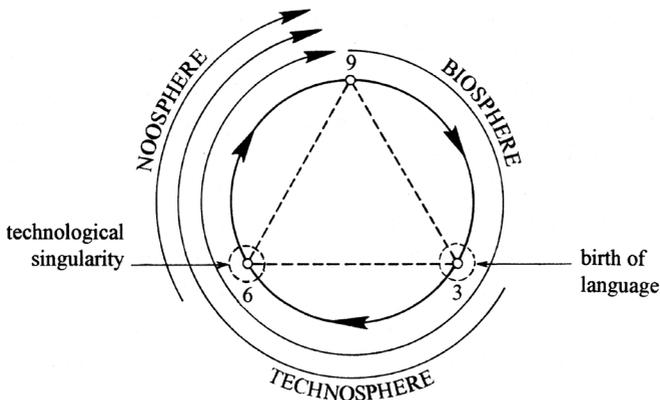
The technosphere is reaching an intensity which is severely disturbing the balance of energies on the earth. We speak in terms of pollution, extinction of species, population explosion, and so on. We contrast the workings of technology with those of the natural ecologies, but we must remember that both are expressions of the same forces acting on the earth's surface.¹⁰ It is only that, with the advent of our contact with open-ended information processing, the rules have been changed. This is the arising of *mind*. The consequence seems to be a situation out of control, whether or not this is manifested in technology.

There is an accelerating rate of innovation which has thrown everything into chaotic change. If we chart this, we see that we are more and more rapidly approaching the point where innovation will become virtually instantaneous. This hair-raising possibility has been given the name of "technological singularity." The two sides of this singularity, past and future, are divorced from each other. The future beyond this singularity is outside any sphere of expectation that we can generate from this side, in the past. Already, general world culture is saturated with a sense of time in which progress in every sphere—from art to economics—is felt to be an illusion. The assurance of

comprehensible step-by-step progress has almost vanished. Instead, people live in expectation of radical discontinuities.¹¹

In order to complete our first approximation of the enneagram of the crisis of humanity and the biosphere, we introduce the *noosphere* as the third octave. I referred to this before as "knowledgeable mind" to suggest that it is seen as something capable of dealing with the situation. At this point, we are indifferent to whether it is something spiritual or something material. The great Russian scientist Vladimir Vernadsky saw it in entirely materialistic terms, while Teilhard de Chardin made it into a mystical concept. The biosphere suffers under the impact of the technosphere, but this phase may only be the prelude to the noosphere's emergence.

Let us now look at the enneagram with its three octaves: biosphere, technosphere, and noosphere (fig. 12.1). Each of the three is related to evolution, but *the meaning of evolution is different in each of them*. Each octave builds on the octave already established. The technosphere exploits the biosphere, and the noosphere can be expected to rely on the technosphere (for example, for accessing needed information). Our perspective in the enneagram of crisis is centered on the critical impact of technology on the biosphere. The technosphere offers a challenge to the biosphere which causes the opportunity of the noosphere to emerge. But the realization of the noosphere through this opportunity is not automatically assured.



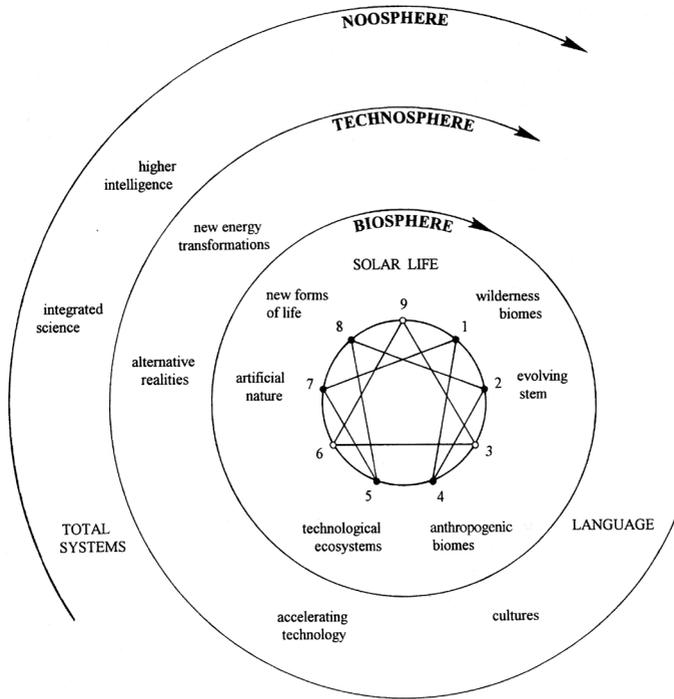
12.1. *Biosphere, technosphere, and noosphere.*

The technological singularity represents one way in which we can see the transition of point 6 on this enneagram. If things continue as they have been doing, we are headed toward a point of maximum uncertainty and hazard which might even destroy most complex life forms on the planet! Many people think that a reduction of momentum will prevent us from reaching this crisis. An ultimate limit to the amount of energy that can be made available might curtail the rate of growth of technological innovation. There is an uncertain relationship between energy expenditure and innovation. Three billion dollars is about to be invested in nuclear fusion research to produce a prototype that might actually work by 2020. This comes after almost thirty years of research.

There is a feature of technology which has gone unnoticed until recently: it has a tendency to decay. In place of the chromium-bright and tunic-clad images of the future that dominated popular culture a short time ago, we now picture dark futures full of hi-tech decay and tyranny.¹² In the movie *Bladerunner* the cutting edge of technology had been transferred to other planets, leaving a remnant population living in technological degeneracy. This is not just science fiction. The majority of people in the world today are living "downstream" from technology. Technology as we know it today requires a shock to enable it to develop further along its own octave. If we picture ourselves standing at point 5 in the enneagram, then our technology is faced with a critical interval. It has increased in intensity and tempo, but now it needs to change in quality.

Information technology and artificial intelligence are key factors in this drama. There are important trends toward organic, evolutionary methods in design. These promise to greatly shorten the time required for effective improvement, but this is only the faintest help compared to what is needed. The potential of artificial intelligence is broader and more powerful than anything we have seen to date. What is needed is nothing less than an integration of human, technological, and organic intelligence in a noospheric totality. In this respect Lewis Mumford expressed something very well: "Our capacity to go beyond the machine rests on our power to assimilate the machine. Until we have absorbed the lessons of objectivity, impersonality, neutrality, the lessons of the mechanical realm, we cannot go further in our development toward the more richly organic, the more profoundly human."¹³

The Three Octaves



12.2. *Nine points of evolution.*

First Octave

On the scale we have chosen, the articulation of the six points—1, 2, 4, 5, 7, 8—is broad in scope. In dealing with the biosphere, the first octave which continues right around the circle, we have to take the global character of the terms into account. We cannot simply speak of the various species, or even of the kingdoms. The biosphere is not the aggregate of living species but an intricate and dynamic coupling of living and nonliving matter. We have to speak of *biomes*, which are its natural units.

After the rise of organic life in the first place (point 0), came the emergence of the "wilderness biomes" (point 1). These are those broad ecological systems like deserts, rain forests, savannas, and tundras, where species, geography, and climate intertwine. These did not exist in the early stages of the biosphere.

The biomes give rise to "successions." In this phase climatic and terrestrial changes spur the succession of differing ecologies as they respond to and exploit the varying environmental conditions. These successions take place within wilderness biomes, but they are capable of initiating major evolutionary changes on the scale of the biomes themselves (such as those which established the biomes in the first place). It is in these successions that we find the major spurts of evolution and the rise of the new evolving stem (point 2) of the biosphere. When dinosaurs disappeared through drastic climatic change or the impact of a large meteor, there was an opening for mammals to evolve into the dominant species. In our present era the evolving stem is humankind.

In general, we find that the first point in a phase of the enneagram has a spatial character and the second, a temporal one.

At point 4 we see the emergence of the *anthropogenic biomes*, classes of artificial, man-made ecology such as we find in farms and cities. At point 5 we see included the emergence of new kinds of ecosystems, which are created with the aid of technology and are as far removed from the anthropogenic biomes as these were from the wilderness. They are artificial, engineered, closed ecological systems such as those constructed in Russia and the United States—approximations to total, global systems. Also, we see the beginnings of a synergic management of ecosystems—in which economics, ecology, culture, climate, transport, production, and so forth are considered together. This is an anticipation of the third octave, the noosphere.

The prospects for the biosphere beyond point 6 are largely unknown. There has been speculation that we may well have to undertake a *terraforming of the earth*. This seems to be a contradiction, since the earth is already earthlike! However, the impact of technology is becoming so great that even the wilderness may need to become a man-managed artifact. This corresponds to point 7, which I call artificial nature to highlight the apparent contradiction. The prospects associated with point 8 are even more extraordinary, involving production of biospheres in the depths of the ocean, in the Arctic, or in space. They would employ aspects of life's potential that have not yet been seen on earth.¹⁴

At the end of this process, at point 9, we must have a solar life, a kind of life capacity capable of spreading throughout the solar system. Although this kind of life must evolve through the intervention of human-technological forces,

wherever it enters a new world, the nature of that world will take over the shaping of the new wilderness.¹⁵

Second Octave

The second octave begins with language (point 3). Point 4, we associate with *cultures* or civilizations, and point 5 with accelerating technology.¹⁶ The cultures of point 4 echo or parallel the biomes of point 1, just as the accelerating technology of point 5 echoes the successions (and evolutionary spurts) of point 2.

The meaning of technology and culture change when we reach point 7. We have only hints of this from the potential of global digitalization: instant global communication is already changing the nature of cultures and political systems, as well as developing new alternative realities, sometimes called cyberspace. Point 8 may involve intuitive powers which have hardly been tapped until now, manifesting in the exercise of new energies. At this point technology and biology may well be reconciled again.

Third Octave

In the third octave, at point 6, a new age is initiated through the influence of total systems. What follows is the start of a global or total system, of integrated sciences and technologies (point 7). We can look at the macrosphere of astronomy, the biosphere, and the microsphere of nano-systems to see the emergence of total systems science.¹⁷ At present we have no methodology capable of managing such enterprises. What can emerge out of these at point 8 are nodes of *higher intelligence*. That is why, in the more traditional language of Gurdjieff and Bennett, this point is associated with "conscious men and women." Such men and women are tapped into what Gurdjieff called objective consciousness, the impersonal wisdom that informs the universe.

We have moved into the realm of speculation, and it takes further speculation to consider that this whole process has a destiny on other worlds. The biosphere has a role to play in the larger solar system and even beyond that. But this is beyond the threshold of point 9. The traditionalist Rene Guenon would call point 9 the *Lord of the World*.¹⁸ It is most interesting that we seem unable to decide whether or not this lord has any *power* over events or even if he (she, it) should be considered personal or impersonal.

We are forced to speak of all this as if it was separated from us in the future. This can be misleading. What lies beyond point 6 is already an influence on the

present. Remember that both points 7 and 8 are connected to point 5 by inner lines. When we enter into the domain of the third octave, we are entering a kind of present moment which is not strictly parallel to our own ordinary experience. Something may already be going on that *we do not see*. If we do not see it then, not only is it not real for us, *we are not real for it*. That is truly terrifying.

The Inner Lines of Regulation

We move from the octaves and their stages to the inner lines that regulate the enneagram's function. These inner lines suggest that intelligence can regulate the mutual impact of the octaves. The octaves do not interact simply in a mechanical way. The linkages are *forms of control*, which means that they are related to intelligence. The inner lines of the enneagram actually do represent something inner.

The inner lines connect in the sequence 1-4-2-8-5-7, and the pattern is cyclic: 7 connects to 1. In pouring a glass of water, point 8 appeared as an image of the completed action. It is the *guiding vision* of the whole process. It is one of the three innovative or dynamic points along with points 2 and 5. The stable or conservative points are 1, 4, and 7."

When we think about the inner lines, it is advantageous to take them in threes, because this best corresponds to a control linkage. The linkage 1-4-2 refers to one of the basic biospheric laws postulated by Vernadsky: "The evolution of species, in tending towards the creation of new forms of life, must always move in the direction of increasing biogenic migration of the atoms in the biosphere."²⁰ This rule governs the whole of the right-hand side of the enneagram. We have also noted that an increasing amount of matter and energy made available by the biosphere is being short-circuited through humankind. The anthropogenic (manmade) biomes are coming to dominate the biosphere.

The 1-4-2 linkage shows an anticipation of the future: the development of point 2 is linked with the outcome at point 4. The idea that something in the future has an effect on the present is not at all accepted by most biologists, who prefer to regard evolution as resulting from a succession of contingencies. Vernadsky's concept of the biosphere presupposes a definite direction to evolution. This suggests that we can speak of an *attractor* working on the biosphere which pulls it toward more complex dynamical states. The term *attractor*, as we saw in

considering the nature of the triad, is used in chaos theory to describe patterns of equilibrium. A *strange attractor* is understood as a very complex kind of pattern, not at all like a blueprint or a single-valued design. What actually comes about is not predetermined. It can oscillate between various configurations, or suddenly jump into a completely new configuration.²¹ Periods of near-turbulence alternate with periods of relative order.

As the biosphere changes, so does its possibilities. In some respects, we can think of the inner linkages portrayed in the enneagram as kinds of information processing or computation, since Gurdjieff spoke of them as concerned with balancing the contributions of the three octaves. Here I want to emphasize the temporal aspect of this balancing: that the inner lines link what has happened with what might happen, to affect what is happening. The idea of computation as an integral part of the natural order is fairly recent, and it is not an anthropomorphic projection. Once we accept that information is as much a part of existence as matter and energy, every entity can be seen as a computational device, including the whole universe. Computation has an effect on the succession of events and is not a mere reflection of what actually happens. It is a necessary function in self-organization. Gurdjieff speaks of Great Nature being compelled to do certain things or as adapting certain things—for example: "Great Nature most wisely adapted the inner organization of beings" (BT p. 788). Such adaptations arise out of computation which, obviously, must allow for innovation and foresight of some kind. Gurdjieff's description of the dramas surrounding early human history suggests that nature's ingenuity was stretched by the interference in human development from higher intelligences. Put in our terms: certain computations coming from a higher sphere overrode those taking place through the biosphere (Great Nature), forcing it to adjust.

In this enneagram point 6 is the point of entry of the noosphere. According to the principles of the enneagram, this presupposes a harmony with the processes of the first phase, the biosphere, and a resolution of the dilemmas created by the second phase, the technosphere, in which we are now living. This is represented by the linkage 2-8-5. These three points usually concern the emergence of the new. There is a science and technology of the biosphere which is now emerging. It is a departure from the mechanistic approach which is part and parcel of the megamachine. It is to be expected that the majority of scientists view this latest development with suspicion. The apparatuses in this field (for example, artificial

biospheres and cyberspace) cannot be controlled according to the entrenched methods of machine design. They require use of complex and, to some degree, unpredictable systems. In other words, they need to take account of the computational power of nature itself and work in harmony with it.

In terms of the existing, dominant megamachine, the arising of *biospherics* (a new science concerning the properties of this newly discovered class of entities called biospheres) is both unexpected and inevitable. It is unexpected in the contemporary milieu, since it concerns the harmony of the whole. It is inevitable, because we are beginning to suffer and understand the effects of the technosphere on the biosphere. It is also important to recognize the great significance of intelligence creating intelligence. This goes far beyond the present crude attempts at computer-based intelligence to include artificial life.

Each of the three points 2, 5, and 8 indicate something with radical significance for the future. At point 2, we have the evolving stem. This represents the best bet the biosphere can make at the time. The material and energy resources of the biosphere are focused disproportionately. At point 5, where we engage in the human story, we have the radical impact of technology. The cultures of point 4 are, in a sense, left behind. Their atavistic trends act to put a brake on the acceleration of technology as a conscious control of the environment and its matter and energy. There is a kind of tenuous global culture of science and technology, but it is looking to the future for its development. The power of point 8 is in its capacity to operate with everything all at once. It supersedes the technological power of point 5, ultimately based on consciousness, with a transformative power ultimately based on creativity.

The 7-1-4 points concern *stability*, and their inner linkage represents the concerns of conservation. There is a need to re-experience the nature of ecosystems in order to learn what works. This is to take nature as our teacher. There are already signs of this in the application of ecological principles to industry, where the waste products of one industry become a resource for another. Coupling industries together in this way greatly reduces pollution, is energy-efficient, and supports communities. In the larger picture, the linkage 7-1-4 indicates our role as *steward of the biosphere*. Our responsibility is to foster the welfare of all life on earth.

We have associated the stable points with the biomes. There is a structural parallel between the wilderness biomes of point 1 and the cultural biomes of

point 4. Each represents an optimum under its given constraints. At point 7 we would have intelligence biomes that cannot be subsumed under the cultures. A feature of these biomes would be fast, global information processing, unhampered by local barriers due to mindsets.

An injection of intelligence is needed to resolve the underlying crisis which we and the biosphere face. We look for more information and build faster computers of ever-increasing capacity, but what is required is *intelligence of another order*. This is indicated in the linkage 8-5-7. To get us through to the next phase, nothing less than a hook-up with higher intelligence is needed. This means that the mind which appeared in the second octave has to be transformed into something new. A new form of mind implies a new form of information and communication.

The Structure of Sustainable Development

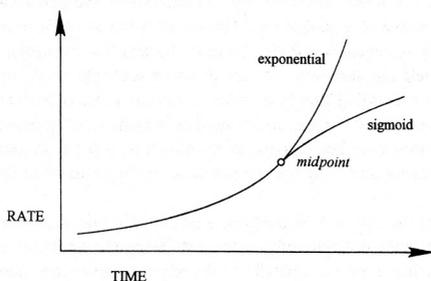
As I have intimated throughout this book, the enneagram is thoroughly compatible with twentieth-century systems theory. This is true of the structure of development, particularly economic development. The dominant attitude of politicians and media image makers is that development should just go on and on, but those who understand systems see this as theoretically and practically untenable. Actual events are constantly showing the lie of unbridled development. Unfortunately such occurrences, like the recession of the 1980s, are interpreted as merely aberrations which can be put right by fiddling with the monetary systems. Such aberrations have, in fact, been a feature of economies for as long as we have records.

The technological singularity that I spoke of can be seen as a point of catastrophe. This is not necessarily a destructive or bad thing. A *catastrophe* has the technical meaning of a sudden shift from one state into another—a break in continuity, like a wave curling over to break into turbulence. Our present-day economic systems tend to crash, in smaller or greater degree, because of their very nature. The dynamism between capital, resources, and markets must contain a certain degree of self-destruction. The more we manipulate money and resources to control the economy, the more it is likely to crash. The reason for this is that these manipulations are not based on the holistic principles that actually govern self-organizing systems like the biosphere.

Without an *inhibitory*, regulative element, stemming from a corresponding perception, we end up with a system out of control. The action of opening up the tap to fill a glass with water needs to be balanced by a perception and a means to close the tap. Without these there is no system, only a movement toward chaos. Our present economies work like taps turned on. When water begins to flow, it provides positive feedback which then makes the flow even greater. Such a one-way feedback system can only break down. If we do not learn how to reduce the flow from the tap *intentionally*, we can rest assured that it will be reduced *mechanically*.

This is particularly important now because we face breakdowns that can affect the infrastructure of the biosphere and cause irreversible damage. In human society these manifest as wars, poverty, and disease. These are not causally linked to what is happening in the biosphere, as we previously understood causes ; they are systems-linked.²² Consequently, some people see the connection directly, while others have to be persuaded by circuitous arguments.

In place of the technological singularity, where the rate of development approaches instant change, we can strive for a sigmoid pattern of development. In the S-shaped sigmoid pattern, when development speeds up toward insupportable proportions, it then levels off, reaching a stable plateau, (see fig. 12.3).



12.3. *Developmental curves.*

In the enneagram model, the turning point in the middle of the S-curve lies between points 4 and 5. If the turning is not achieved, the system heads toward insupportable behavior and ends in chaos. Point 6 in the enneagram represents an input of superior information. This makes point 5 a point of critical

significance. It represents the point at which the rate of development can no longer be increased without heading into catastrophe. It is the crunch point. If we are only aware of what proceeds along the outside circle, this won't be apparent. Without communication from point 8 (in the inner line connection 8-5-7) we have no vision, no pattern which enables us to assess our situation.

The critical role of point 6 is to blend an extra dimension of perception into the system. Such a perception "sees the forest for the trees," is aware of the total system properties, and is capable of giving rise to intelligent regulation. This intervention can only work when point 5 and point 6 can come to an agreement. This did not happen with the first Club of Rome report (a potential carrier for point 6), which was derided by the critics who were centered on point 5.²³ The abstract information of the report did not match with the concrete complexity of the situation.

Interestingly enough, the critics made a fundamental error in confusing creativity with chaos. They argued that the increasing complexity would always generate its own solutions, indefinitely. It is still a popular fallacy that creativity takes place unintentionally and with no relation to ethical or spiritual factors. This is only true for a low level of ongoing, random, piecemeal, and often violent innovation. The Club of Rome, on the other hand, failed to relate the gross simplifications of their model to the real situation and fell into the trap of making explicit prophecies of a collapse which failed to materialize.

The intervention of point 6 has to be engineered with precision. It is probably insufficient to advocate a slowdown, without offering some other, new form of development. We see a hint of this in the growth of information technology as the more gross manufacturing arena slows down. Now we have the prospect of linking technologies in an *ecological* manner with synergetic payoff. Of course, every new line of development, *after* it has been set in motion, becomes the playground of the corrupt and narrow-minded (the inner line 7-1 shows that the new idea stimulates a new line of exploitation). The intervention at point 6 has to be continually renewed. A point to be made here is that humankind tends to take itself too seriously. We are obsessed with the tragic option of destroying everything that is of value. A cosmic sense of humor would give not only relief but also much-needed insight. God's greatest gift to humanity may have been a sense of humor. It is, at least, an antidote to self-importance and even has the potential to detach us from the realm of mind.

Much of the first part of Gurdjieff's *Beelzebub's Tales* deals with intervention at point 6. Beelzebub's task of stopping the escalating trend of animal sacrifice is an exact parallel to the requirement to tone down rampant development before it reaches overwhelming catastrophe. He is successful—through the implantation of certain *new ideas*—but problems such as war continue. Beelzebub represents a higher intelligence. This intelligence, though constrained by particular circumstances, draws on an inexhaustible creativity and sense of the absurd.

The realm of the third octave of the enneagram represents something that is beyond space and time. In his writings Bennett called this the *hyparchic future*, a creative kind of future that is not the resultant of the past.²⁴ It might well be described as the *creativity of the whole* in contrast with the creativity of the parts, which is what we see in the random innovations taking place around us. What has so far been missed in the advocacy of the sigmoid pattern of development is that this is only possible with a *creative* input. The bare notion of regulation will never be enough.²⁵ There needs to be a creativity which addresses the concrete situation in all its complexity by being in the future, ahead of the game.

What we see in the existential problems of economic development is only a shadow of the dramatic issue of the human soul. By our very nature, we must become ever more involved in the workings of the material world, but we do this at a cost. There is a wonderful Gnostic tale of a young prince from a divine kingdom sent by his father down into a lower world to recover a precious pearl. The prince has to disguise himself to pass as one of the lower beings. But then he forgets who he is. The vestments take him over, like a mask. Only when his father sends him a message, a bird that whispers to him who he is, does the prince remember what he has to do. He recovers the pearl and returns to the rejoicing of his parents in the heavenly kingdom.²⁶

The father in the tale needs to redeem his son. We too need to be redeemed. Our involvement in the material world puts us at great risk. Redemption is nothing less than a necessity given the human situation. No piecemeal efforts of whatever nature or extent will ever be able to assure man of his link with the divine, or his own higher nature, or with *who he really is*.

Of course, the majority view in present culture is that we have no need of redemption at all. We simply are what we are, autonomous beings, with no need for justification from a higher realm. This, in fact, emphasizes the crisis we are in, corresponding to point 5 of the enneagram. Here we see ourselves locked into the

consequences of our own inventions. As such, we *cannot* evolve any further: whatever our intentions, whatever the degree of progress in invention, we remain the same. Constantly, we are pulled back into limited cultures and belief systems. In base terms, no one can pull themselves up by their shoe laces.

The kind of impasse we are in illustrates the nature of point 5 in general. It always can be taken as an *end point* instead of a transitional hiatus. In the individual human, this is sometimes associated with egoism. It is powerful stagnation.

The Logos of the Biosphere

I am not presupposing any higher-order pattern which contains all the answers. What could such a thing mean? The difficult point to grasp is that the higher intelligence concerned in the fate and destiny of the earth requires the cooperation of human life. This is not attained by either coercion from above or by rampant heedlessness acting from below. It is the crucial historical factor. All that has been so far produced, both in religion and in science, serve, at best, only as preliminary exercises or provisional explorations.

The law which is in operation is the *logos* of the enneagram, represented in the triangle. It can be viewed as a triad of commands and equally of values. The three commands *inform* the three octaves. In terms of the nomenclature of the enneagram, these are represented as the lines 9-3, 3-6, and 6-9. The point 0, which is in the same place as 9, does not appear, because we are not concerned with the *facts* of the situation as much as with the *values*. The *logos* concerns values, while the octaves concern facts.

To give some form to our discussion, I propose that the three commands are:

- 9-3 Survival (shared with all life)
- 3-6 Emergence (the historical force "seeking the new")
- 6-9 Unification (synergy of values)

The crisis we are in is described by the opposites to these imperatives: extinction, stagnation, and disintegration. It has been suggested that technology could make it possible to colonize the solar system, possibly through controlled use of fusion reactions, a source of energy independent of the organic biosphere (which can

only process solar energy). This would divide humanity into populations with different environments *and values*. The possibilities for radical divergence between subpopulations, based on changes in both biology and technology, have been explored in literature.

The significance of the third process of the enneagram is that it introduces a totally new player into the drama. This is something in its own right. Gurdjieff said that we humans have to serve something, be food for something.²⁷ This means that we cannot, even in principle, be self-sufficient. Not only do we rely on the rest of organic life for our food; we rely on what is beyond life for our evolution. This might be literally true in a very stark and frightening manner. In an empirical sense, what is beyond life is simply *death*. The evolution of complex life such as ours depends almost exclusively upon death. It is important to acknowledge this in relation to our conceptions of higher powers. In a very real sense, these powers are dead, but they are *consciously dead*.²⁹ An animal, in contrast, is unconsciously alive. Life is only an intermediary condition, if we imagine life to be like that of an animal or plant. There is something beyond life, of another order. Maybe it is like a planet or a star. And, in some sense, this other order *eats us*. It must be fed!

From such primitive intuitions, the ancient ideas of sacrifice must have arisen: by giving captives or animals unto death, the rest, the people, could be spared. Exploration of this idea is one of the first and greatest themes of Gurdjieff's *Beelzebub's Tales*. There he argues that the idea of sacrifice is misconstrued—that what is required as food for the higher is not the aroma from the sacrificial fire, nor the energy of palpitating hearts torn from their owners, but a certain energy or substance that can be generated by conscious work and intentional suffering. It is because so little of this energy is produced intentionally that the whole earth suffers and that people come up with monstrous ideas such as that of ritual sacrifice.

In this respect, the arising of *conscious individuals* on the earth can make all the difference between success and failure in the evolutionary stakes—and, maybe, even in survival. A conscious individual is one who is able to produce subtle energies intentionally and, *through this work of transformation*, communicate with what is beyond life and be given the *sight* of higher worlds. The future of life on earth depends on the attainment of higher perceptions, the ability to assimilate the higher hydrogens of impressions. Only if we have men and women who are

of the nature of point 8 do we have a chance of making the next step. The traditional role models—variously called avatars, saviors, buddhas, and the like—are probably totally misleading, since they now belong to the world of expectations and are embedded in existing human cultures. The real action from point 8 may have little to do with enhancing our life-based dreams.

Notes

1. It is estimated that 40 percent of biospheric production is now involved in human systems.
2. Vaclav Havel, the Czech president, said in 1994 that a "single interconnected civilization" is emerging, but that this is only on the surface of human lives. Below that surface, he sees a countervailing reassertion of local cultures and a clinging to the "ancient certainties of their tribe." Havel appeals to the sense of being a cosmic citizen: "We are not here alone nor for ourselves alone, but. . . . we are an integral part of higher mysterious entities against whom it is not advisable to blaspheme." As one might expect, he has been criticized for lack of specific proposals. This only goes to show that people are still stuck in wanting answers before they have acknowledged the significance of the questions.
3. See Richard Dawkins, *The Blind Watchmaker*. This idea was intimated earlier by C. H. Waddington in his book *Man: The Ethical Animal*.
4. Alexander Marshack, *The Roots of Civilisation*, pp. 12-3. Much the same picture was given by Oswald Spengler in *Man and Technics*.
5. We can find this reflected in the teachings of Krishnamurti under the theme of: How did man make a wrong turning? See J. Krishnamurti and David Bohm, *The Ending of Time*.
6. J. G. Bennett, *The Dramatic Universe*, vol. 4, pp. 259-63.
7. Julian Jaynes, *The Origin of Consciousness and the Bicameral Mind*.
8. See Karl Popper and John Eccles, *The Self and its Brain*.
9. See my comments on participation in the third force in chapter 4.
10. This point is well made in Dorian Sagan, *Biospheres*.
11. See, for example, the Korda movie *Things to Come*, based on H. G. Wells' novel *The Shape of Things to Come*.
12. In a similar vein, Gurdjieff speaks of various "transapalnian perturbations," or "cataclysms not according to law," taking place through human history and radically altering it.
13. Lewis Mumford, *Technics and Civilisation*, p. 363.
14. See my discussion of artificial biospheres in "Artificial Worlds: The Enneagram of Closed Engineered Ecological Systems," in *Impressions* (Journal of the Claymont Society) 8, no. 1.

15. Organizations like the Nature Conservancy are already acquiring land and managing it as wilderness havens for endangered species.
16. In Arnold Toynbee's scheme, as set out in his monumental *Study of History*, civilizations are considered in terms of religious vision and stretch of empire. It would be more relevant to consider them in terms of scientific and technological innovation and implementation.
17. *Nano* means nine and refers to the scale of one centimeter divided by ten, nine times. Nanotechnology is the technology of using machines on this minute scale. At this scale, technology and life would become indistinguishable.
18. See Rene Guenon, *Lord of the World*.
19. These distinctions were introduced in chapter 1.
20. See Vladimir Vernadsky, *The Biosphere*, Appendix one. The term *biogenic* means "produced by life."
21. Our own global weather has two main attractors, one of which corresponds to an ice age. Relatively small perturbations may flip the planet into this configuration.
22. For example, both Gurdjieff and Bennett believed that the development of electrical energy has had a deleterious effect on the human psyche.
23. See Club of Rome, *Limits to Growth*.
24. The hyparctic future was one of Bennett's most original ideas. In this realm, non-thermodynamic operations could change patterns. This means that there is always far more that can be done than we expect! If we look at the enneagram in terms of time, taken in a broad sense, then the first phase deals in ordinary linear time, the second in eternity, or non-time, and the third in hyparxis, or anti-time. Each phase has its active and passive modes. The total of *six* factors which conjoin through the inner periodic figure constitute what Bennett calls the *present moment*.
25. In the last chapter, in discussing the points as they appear in the inner lines, I associate regulation with point 7 and creation with point 8.
26. Jonas, *The Gnostic Religion*. Perhaps the classic work in this genre is David Lindsay's *Voyage to Arcturus*, in which different moral philosophies and religions are shown to arise from different sets of sense organs. A more recent expression is Bruce Sterling's *Schismatrix*. Kim Stanley Robinson's trilogy on the colonization of Mars, beginning with *Red Mars*, is a masterpiece of imagining the complexities of the future once humans move into space. Of course, different races and cultures arose in the first place out of differences in geography as well as of language and belief. Hence, we have the intriguing prospect of passing through a relatively homogenous global phase to a reversion into quite separate and mutually incompatible groupings. In this perspective from the future, the present century might begin to look like the Golden Age!
27. A highly sensational form of this idea was produced by Charles Fort in his famous statement, "I think we're property" in *The Book of the Damned*. This was used as a theme in the science fiction novels *The Puppet Masters* by Robert Heinlein and *Mind Parasites* by Colin Wilson. It is not all that far from Orage's answer to the question "What is the purpose of man?" – which was: "Mutton and wool!"

28. See Bennett's description of planetary existence in *The Dramatic Universe, vol. 1*, where he takes the phrase "consciously dead" from Douglas Harding and quotes him as saying: "Many-sided death is the condition of her [the earth's] vitality" (Harding, *The Hierarchy of Heaven and Earth*, p. 89).