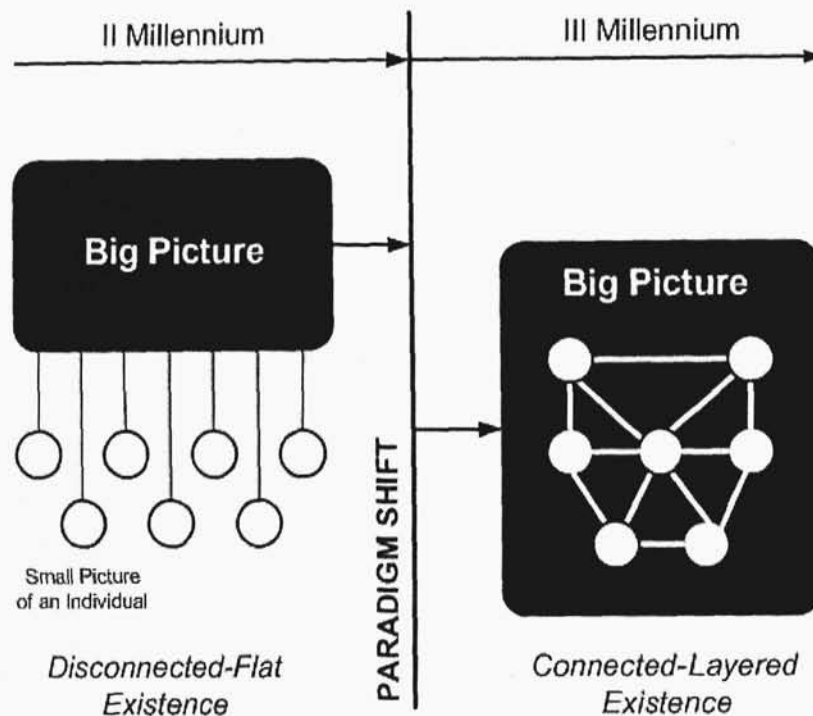


Figure 4-3. The paradigm shift of existence



thanks to computer networks and to increasingly accessible realms of information and knowledge. Thus, man becomes better informed and realizes that he is not alone. In itself, the act of communicating with other people from another part of the globe forces people to act locally and think globally. In other words, the big picture works its way into the way of thinking of an individual who no longer considers himself alone against dominant ideas of the age. The individual becomes a part *of* rather than apart *from* the big picture. We can call this way of life a connected-layered existence.

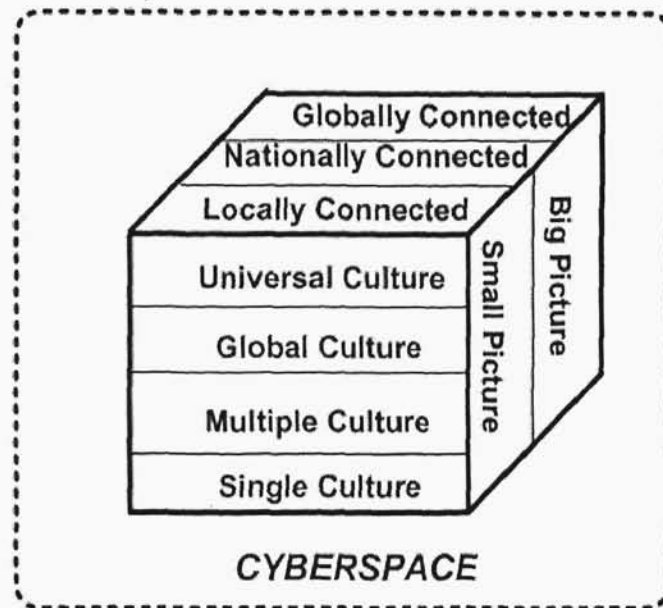
Changes in the architecture of existence in the second and third millennia are shown in Figure 4-3.

THE CONNECTED-LAYERED EXISTENCE

Mankind is entering the third millennium forming an awareness of a four-dimensional space. This space can be described thus:

1. A space of life principles formulated in layers of big picture and small picture
2. A cultural space defined in layers of integrated native, national culture, adapted, national culture (e.g., after immigration), and an emerging global culture
3. A communication space defined in layers of integrated local, national, and global information infrastructures
4. Cyberspace, which makes it possible to do business by electronic means, for example,

Figure 4-4. Connected-layered existence



electronic commerce, digital banking, digital libraries, and so forth

A model of a connected-layered existence is shown on Figure 4-4.

The connected-layered way of existence breaks from the previous isolated, "island" way of life in the ocean of billions of people. This form of existence increases the degree of complication in life and demands a good education as well as computer and information skills. This new existence may seem, at first glance, schizophrenic, but hopefully with better education it will be embraced. People lacking this new type of knowledge, but relying on skills of the past, will find themselves outside the system of the future. In other words, the new system of existence liberates a person from the past in his/her quest for the future.

THE HARMONIC DEVELOPMENT OF EXISTENCE

A system of living in a four-dimensional space gives humanity, for the first time, a relatively effective opportunity to take advantage of consensus within a group in which this agreement makes sense. The process of seeking agreement is a process of minimizing conflicts among people, a recipe, as it were, for living in peace and equanimity. This does not mean that all conflicts will be entirely eliminated. This new opportunity for man has been put forth clearly by Jurgen Habermas in his philosophy of communication. Such a philosophy does not replace such a philosophy of rationalism as was introduced by the Enlightenment, but serves as a complement to it. Basing life exclusively on a rational foundation can be misleading, since many areas of life are excluded from man's rational judgment.

Opponents of the rational-action method argue that man usually places greater importance on defining for means than on establishing "rational" ends. It is true that the so-called quantitative methods of optimizing decisions put pressure on the technique of allocating means with the unspoken assumption that the goals are appropriate. On the other hand, the rational approach has proven itself worthy in many areas of human experience. Therefore, a wise person does not forget that what is good and serves to enrich his/her life is worth putting into practice. However, basing life solely on a rational criterion does not properly reflect actual human activity. By the same token, achieving consensus cannot be the first criterion of human activity.

Human communication alone does not lead to knowledge and truth. They do not arise through the process of agreement but are formulated through the process of rational discovery in the framework of accepted inner logic. Basing existence exclusively on communal group understanding was exploited efficiently under Communist and Nazi totalitarianism. Whatever the Politburo agreed to among themselves became the "accepted truth" for the entire society. This led to a decline in rationalism and a regression in humanism: bad became "good" and nonsense became "wisdom." As a result of rational activity, mankind achieved, by the end of the second millennium, a reasonably good standard of living, particularly in Western civilization. This does not mean, however, that even in this civilization, man is satisfied and content. There is, of course, no utopia, no place in the world where every human being is satisfied with his/her existence.

The enrichment of rational human methods involving a communicated search for consensus within a group can lead to a new standard of activity, particularly when the technique of communication is used by people open to dialogue and the search for truth. In fact, without an openly communicated attitude, it is difficult to believe that computer networks alone can ensure universal

agreement. What counts is human development rather than the development of communication techniques. The latter should not be the main goal but should rather act as a catalyst.

We can say that the growth of communication among people (C) over rational, individualized activity (R) must lead, sooner or later, to a consensus of "I know that I don't know," and to set in motion rational activities, calculated to discover new knowledge and truth. Otherwise, the aim of achieving consensus, taken as an end in itself, can lead to a vicious circle, a case of a "dog chasing its own tail."

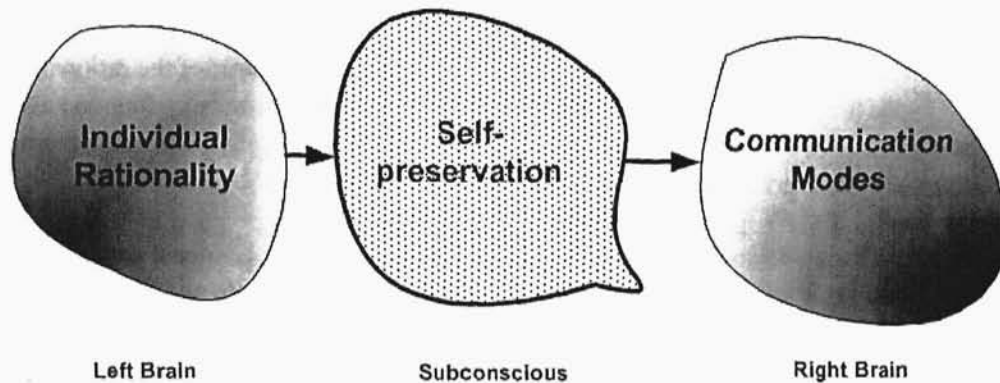
The high degree of affluence in the developed countries, reinforced by the connected-layered existence, enlarges the field of new opportunities for the enterprising individual. These new opportunities and technologies empower (P) the individual in his quest for the future. An empowered individual, however, confronts a new complexity and the need for new knowledge (K) and qualifications. The lust for knowledge, after all, is never sated, and new challenges demand either new knowledge or its realization. A new equation of connected-layered existence (E_{cl}) in the third millennium can be expressed as follows:

$$E_{cl} \rightarrow R(K) \cup C$$

where: $P \geq K$
and $C_1 \rightarrow C_2 \rightarrow \dots \rightarrow C_n \rightarrow R_n$

Obviously, man's main motivation in rational activity and communication is the need for self-preservation. This motivation is embedded in the human subconscious and its instinctive activity. The philosophy of rationalism is solved by the left side of the brain while the philosophy of communication (influenced by emotions and aesthetics) is employed by the right one. From here it is but one step to presenting a model of both sides of brain and their role in thinking and behaving (Figure 4-5).

Figure 4-5. The harmonic development of existence



CONCLUSION: THE "FUTURELESS" PAST

Question "A" concerning the liberation of the future from the past is, of course, a provocative inquiry that one should make on the occasion of the turn of the millennium. Is it suitable to pose such a question at every centenary turn? Should we seek a permanent solution to this problem notwithstanding the anniversary which is about to take place?

Let us examine the achievements that have accompanied previous turns of the millennium. Certainly, the turn of the year one of the first millennium is a great turning point. We accept it (erroneously) as the year of Christ's birth. Of course, only some few Christians of the time "liberated the future from the past." Indeed, the process of that liberation took them more than three centuries when, in 337 A.D., Christianity became the official religion of Rome.

In 1000 A.D. when the first millennium ended and the second began, question "A" would not have been a relevant issue. Quite the opposite, in fact, since peoples' eyes were fixed firmly on

the "past." Yet even this centenary did not go overlooked. Christians were awaiting the "Second Coming" of Christ to Earth, and the Jews, the arrival of Messiah, who would take the world under his command. It did not happen, of course, and both Christians and Jews are still awaiting their respective great events. With today's hindsight, however, we can describe the turn of the second millennium as a gradual formation of Europe. Critical to this formation were the roles played by Emperor Otto III and Pope Sylvester II, who contributed to the rise of the Eastern peripheries of Europe (Poland) at a time when there already existed a western periphery, as well as a center in the form of the Holy Roman Empire. It happened only a half a century later in 1054 A.D., with the schism of the Christian church, which marks the birth of the so-called "East" and "West." This example demonstrates that history does not "wait" for turning-point dates and is capable of identifying itself in other years through phenomenal events.

Again, observing with today's hindsight, we can confirm that something great did indeed occur at the turn of the second millennium. A

Benedictine monk named Gerbert d'Aurillac introduced the figure ZERO to the Europeans. Later the future Pope Sylvester II dressed himself in Arab garb to study in an Arab university on what is today Spanish soil, where he learned the Arab numbers system. The Europeans' knowledge of ZERO eventually led them to the invention of the computer and the Electronic Global Village, though this took nearly a full thousand years! But one thousand years ago the discovery of ZERO still promised nothing to the then citizens of the planet, so they simply ignored the fact.

Perhaps the present turn of the century allows me to pose question "A." The nineteenth century began, practically speaking, in 1789 A.D. and ended in 1914. Nothing like the revolutions of those years occurred either in 1800/1801 A.D. or in 1900/1901 A.D. In politics, the nineteenth century found an application for the rules of "liberating the future from the past." Thus, in education, there was a strong emphasis on the past, that is, the Age of Enlightenment. Similarly, the 20th century ended for all practical purposes in 1991 with the fall of the Soviet Union, an event that spurred a full "liberation of the future from the past" and a change in the paradigmatic world order.

At this point, we come to the crux of the matter, which Thomas Kuhn already formulated a long time ago, that every paradigmatic change encourages and even compels us to "liberate the future from the past." If we confirm that indeed there is such a change at the turn of the third millennium, then the principle of "liberating the future from the past" should be applied.

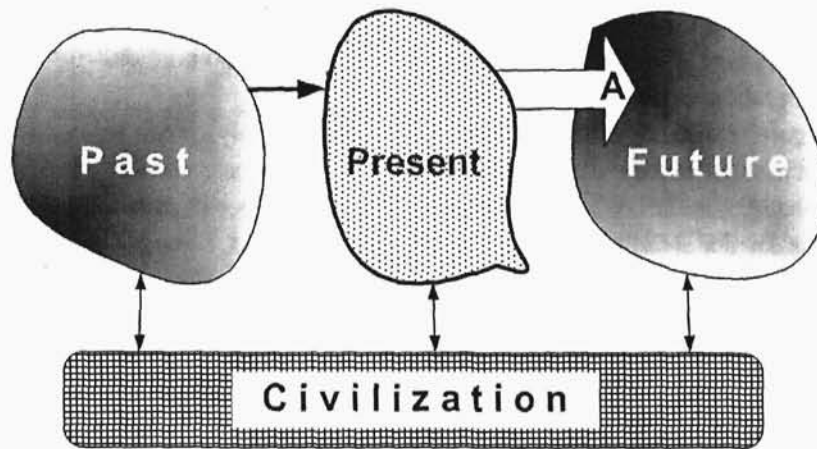
In the preceding analysis of the transformation of civilization at the end of the first millennium, we have established that there occurred a somewhat time-eroded change in the system of human existence, and we can see this clearly. Due to the strong influence of computer networks, Internet and otherwise, the formation of a new system, INFOCO-5, is now taking place. This demands of men and women with aspirations the following changes for an eventual improved way of life:

1. A passage from a disconnected-flat to a connected-layered existence
2. An enrichment of activity, founded exclusively on the basis of the rationalism of the individual, an activity founded also on the basis of group communication with a goal of attaining consensus

These are great changes, penetrating deeply not only into social life and the educational system itself, but also into the contemporary system of behavior (biological systems). The system of human behavior has, for several hundred generations, been founded on the "disconnected-flat" existence of the individual, storm-tossed by great events independent of the individual himself. This system has indeed become a component of human nature. Those who wish to split with this system and pass over to a harmonious development of their own existence must "liberate the future from the past."

These people will start and, indeed are already starting, the transformation of *homo scriba* into *homo electronicus*. Those, on the other hand, who either choose not to, or are not prepared to, adopt the new paradigm of the third millennium, must inevitably meet with, in Toffler's words, "future shock." These people, *homo manuscriptus* will live on the peripheries of the electronic civilization. And in the long term, the electronics enthusiast will be able to ask about them: "Are they not condemned to perish?", as was, for example, *homo neandertalensis* about 30,000 years ago in what is now present-day Eurasia, despite his brain size of 1700 cc. The Neanderthal was destroyed by invaders from Asia armed with a superior INFOCO system in the form of a developed language. Then, on the other hand, the electronics pessimist could say of electronic man that his world will be so complicated that he will be easy to destroy, and therefore it is the hominids of preceding generations who have a better chance of survival—especially if we keep in mind that

Figure 4-6.



the best chance of surviving an atomic explosion is held by the most primitive of beings, such as the cockroach.

In order to function effectively, *homo electronicus* must be well-educated, since his world is four-dimensional and multi-layered with a wide range of complications. Among the many virtues of being well-educated is the attainment of a high awareness regarding existence.

Translating this into a language of interpersonal or even international relations, we can say that such a person can allow himself the luxury of "liberating the future from the past." Take for example French-German and German-Polish relations. In spite of their rather grim past, these nations, considered among the best educated, can manage to forgive each other such aggressions and crimes as were perpetrated during two World Wars. Some educated people feel that even Communist or Nazi totalitarianisms must at one time have had their place. Their ignominious defeat

is a successful if costly lesson for humankind, which has rejected this form of solution in its further development. The idea of militarism, for example, so deeply rooted in the German nation has had, after World War II, no chance of revival. Similar cases involve American-Japanese relations as well as those between South Korea and Japan. These nations are beginning to look at the "future" less and less with a complex about the "past." This represents a major triumph of "communicated humanism."

On the other hand, the low education level in the countries of the former Yugoslavia led, at the end of the twentieth century, to genocide. The similarly low education level (especially in the social sciences) in Russia is the reason that this country is adjusting with some difficulty to its non-imperial status with its neighbors.

In conclusion, we can say that the paradigmatic change in civilization at the turn of the millennium lets us propose a "liberation of the future

from the past,” while at the same time adopting the lessons learned from the past and retaining all the good that it has created and accumulated. It is all a matter of maintaining suitable proportions and moderation, or, as the French say *tout proportions gardes*. A complete break from the past would be harmful to man’s future. Mankind should know how to break only with such a “past” as impedes its development in the future.

A model of such liberation is represented in Figure 4-6. The model applies in particular to the civilization infrastructure, especially during a time of planning a new phase of civilization. With regard to culture, it will not be easy to limit the “past” in human activity. For the desperate, whose existence is one continuous chain of hardships and indeed of tragedies, a “pastless future” is a great hope for the better.

A. Further Research Directions

- Investigation of a communication role in the confrontation of the Neanderthals and Cro-Magnon people in Europe 40,000 years ago, which was won by speaking people over using simple sounds ones
- Investigation of the INFOCO-3 system (print) versus the INFOCO-4 (computers) and INFOCO-5 (networks) systems in civilization development, particularly at the level of intellectual contributions
- Investigation of the transformation from the disconnected-flat to connected-layered existence in the 21st century and its impact on human life and performance

B. Research Opportunities

- Explain whether “*Future Shock*” (as hypothesized by Alvin Toffler) is caused (among other factors) by the transformation from the small to big-picture worldview and the

poor application of this view in individual lives.

C. Additional Ideas

- This kind of research should strongly contribute to a new classification of personality types in psychology.

D. Rationale

- It is evident that any study of contemporary civilization is inseparable from history. In order to be rational in present and future human undertakings one must learn from the past. History is mostly about war, conflicts, which are the usual means of destroying one civilization and beginning another one. We rarely study the peaceful periods and learn how to apply their lessons, which would be much worthier objects of study than wars (study works of M. Melko, [1990] and Melko & Hord [1984]). Even worthier is to study how humans evolved within civilization, due to their rising intellectual capacity. From a modern perspective, past human decisions sometimes seem questionable. However we forget that those decisions were driven by human minds, which reflected human intellectual capacity at that time. This capacity evolves continuously and fortunately is growing and able to solve more complex problems. Therefore, the study of INFOCO systems’ evolutions gives us a profound perspective on the human potential in solving civilization’s problems. It is important how we are going to shape education, policy, and society in general, knowing what kind of INFOCO systems we have to our disposal. Particularly new for the evolution of humankind is the transformation of single-culture-oriented to multi-culture-oriented individuals, who want to be involved in the global civilization, or its successors.

E. Additional Reading

- Bell, D. (1980). *Sociological journeys: Essays 1960-1980*. London: Heinemann.
- Bernal, J. (1989). *The social function of science (1939-1989)*. Berlin: Akademie-Verlag.
- Brzezinski, Z. (1976). *Between the two ages: America in the technetronic era*. New York, NY: Penguin.
- Burling, R. (2005). *The talking ape, how language evolved*. New York, NY: Oxford University Press.
- Carter, J., & Muir, P. (1967). *Printing and the mind of man*. London: Cassel.
- Chappell, W. (1980). *A short history of the printed word*. Boston, MA: Nonpareil Books.
- Feather, J. (1986). *A dictionary of book history*. New York, NY: Oxford University Press.
- Finlayson, C., Pacheco, F., Rodriguez-Vidal, J., et al. (2006). Late survival of neanderthals at the southern most extreme of Europe. *Nature*, 443, 850-853.
- Gravina, B., Mellars, P., & Ramsey, C. (2005). Radiocarbon dating of interstratified neanderthal and early modern human occupations at the Chateelperronian type-site. *Nature*, 438, 51-56.
- <http://www.talkorigins.org/faqs/homs/lagarvelho.html>. Retrieved March 10, 2007.
- <http://www.guardian.co.uk/science/story/0,,1871842,00.html>. Retrieved March 10, 2007.
- <http://johnhawks.net/weblog/reviews/neanderthals/gorhams>. Retrieved March 10, 2007.
- <http://www.dhamurian.org.au/anthropology/neanderthal1.html>. Retrieved March 10, 2007.
- Kuhn, S., & Stiner, M. (2006). What's a mother to do? The division of labor among neandertals and modern humans in Eurasia. *Current Anthropology*, 47(6), 953-980.
- McGaughey, W. (2000). *Five epochs of civilization*. Minneapolis, MN: Thistlerose Publications.
- _____. (2001). *Rhythms and self-consciousness. new ideals for an electronic civilization*. Minneapolis, MN: Thistlerose Publications.
- McMurtrie, D. (1943). *The book: The story of printing & bookmaking*. New York, NY: Oxford University Press.
- Melko, M., & Hord, J. (1984). *Peace in the western world*. Jefferson, NC: McFarland.
- Melko, M. (1990). *Peace in our time*. New York, NY: Paragon House.
- Mellars, P. (2006). A new radiocarbon revolution and the dispersal of modern humans in Eurasia. *Nature*, 439, 931-935.
- Porat, M.-U. (1976). *The information economy*. Unpublished Doctoral dissertation. Stanford University.
- Richta, R. (Ed.). (1969). *Civilization at the crossroads*. New York, NY: ME Sharp.
- Shannon, C., & Weaver, W. (1949). *The mathematical theory of communication*. Urbana, IL: University of Illinois Press.
- Steinberg, S. (1996). *Five hundred years of printing*. London and Newcastle: The British Library and Oak Knoll Press.
- Wade, N. (2006, December 5). Neanderthal women joined men in the hunt. *The New York Times*.
- Wiener, N. (1948). *Cybernetics*. Cambridge, MA: MIT Press.
- Veneris, Y. (1984). *The informational revolution. Cybernetics and urban modeling*. Unpublished doctoral thesis. University of Newcastle upon Tyne, UK.

(1990). Modeling the transition from the industrial to the informational revolution. *Environment and Planning*, 22(3), 399-416

REFERENCES

- Bronowski, J., & Mazlish, B. (1962). *The western intellectual tradition*. New York, NY: Harper Perennial.
- Deacon, T. (1997). *The symbolic species*. New York, NY: W.W. Norton Co.
- Grossman, L. (1995). *The electronic republic*. New York, NY: Viking.
- Grumley, J. (1989). *History and totality: Radical historicism from Hegel to Foucault*. London, New York: Routledge.
- Habermas, J. (1984). *The theory of communicative action*. Boston, MA: Beacon Press.
- _____. (1998). *On the pragmatics of communication*. Cambridge, MA: MIT Press.
- _____. (2001). *On the pragmatics of social interaction*. Cambridge, MA: MIT Press.
- Hegel, G. (1944). *The philosophy of history*. New York, NY: Willey Book Co.
- _____. (1955). *Hegel's lectures on the history of philosophy*. New York, NY: Humanities Press.
- _____. (1975). *Lectures on the philosophy of world history*. New York, NY: Cambridge University Press.
- Jones, S., R. Marin & D. Pilbeam, M. (1992). *The Cambridge encyclopedia of human evolution*. New York, NY: Cambridge University Press.
- Kuhn, T. (1962). *The structure of scientific revolutions*. Chicago, IL: University of Chicago Press.
- McGaughey, W. (2001). *Rhythm and self-consciousness: New ideal for an electronic civilization*. Minneapolis: Thistlerose Publications.
- Taagepera, R. (1978). Size and duration of empires: Systematics of size. *Social Science Research*, 7, 108- 127.
- _____. (1978a). Size and duration of empires: Growth-decline curves, 3,000 to 600 B.C. *Social Science Research*, 7, 180-196.
- Targowski, A. (1991). Strategies and architecture of the electronic global village. *The Information Society*, 7(3), 187-202.
- Targowski, A. (2000). *Enterprise Information Infrastructure*. Boston, MA: Pearson Publishing.
- _____. (2003). *Electronic enterprise, strategy and architecture*. Harrisburg, PA: Idea Group Publishing.
- _____. (2004). From global to universal civilization. *Dialogue and Universalism*, XIV(3-4), 121-142.