(1999) In: Fukač, J., Chlup, Z., Mizerová, A., and Schauerová, A. (eds) The crossroads of European culture. Vutium Press, Brno, pp. 435-446

European culture in the global conflict of cultures: a view of a biologist

Ladislav Kováč

Konrad-Lorenz Institut für Evolutions- und Kognitionsforschung, Altenberg/Donau, Austria, and Center for Cognitive Biology, Comenius University, Bratislava, Slovakia

Summary

Studies on products of cultural evolution are the domain of cultural sciences. Yet, culture itself is rooted in human biology and hence its nature and dynamics is a legitimate subject of biological inquiry. A definition of the concept of culture allows to apprehend a hierarchical structure of cultures, substantiates their taxonomy and justifies a distinction between European and other cultures. European culture is evolutionarily superior to other cultures because it has undergone the greatest number of evolutionary trials and selection. Biological arguments may not support an extrapolation, based on the current trends toward economic globalisation, which suggests a simultaneous globalisation of culture and a rise of a single culture common to all mankind. European culture itself faces problems which are accumulating at an increasing rate as a consequence of its rapid inherent dynamics. The rapid dynamics may have already brought about a qualitative change of the character of cultural evolution. Should European culture collapse, by implosion from unmanageable problems or under attacks of alien cultures, it may take along into ruins all the other cultures.

The contemporary man has been formed by two distinct evolutions: biological and cultural evolutions. The study of man as a product of biological evolution is the subject of natural sciences, the

study of what cultural evolution has made of man and how it has tremendously expanded man´s environment is the subject of cultural sciences. At such a "division of labour", to make culture a subject of exploration by biologists may appear an illegitimate intrusion of one of natural sciences into a domain out of its competence. It is not so: culture is deeply rooted in human biology (1). Just as most incisive comprehension of complex biological phenomena is being reached by studying their roots at the elementary, molecular, level (hence, in the domain of physics and chemistry), the deepest insight into cultural phenomena may be achieved by analysing their primary, and essential, biological basis (hence, in the domain of biology).

It is at this biological level that the phenomenon of European culture, its relation to other cultures, and its possible future is being considered in this paper. Culture is **a legitimate subject** of biological inquiry.

1. An imperative of the meaningful discourse: explicit concepts

The discovery of asymmetry in the process of acquiring knowledge by organisms, the appreciation that the process does not consist in revealing truth but in disproving erroneous conjectures and hypotheses, may be viewed as **one of the greatest breakthroughs** in the history of human thought. This idea had already been implicit in Darwin´s theory of evolution by natural selection, as a principle of functioning of science had been anticipated by a number of thinkers, but is has been generally acknowledged only thanks to Karl Popper who expressed it in his theorem of falsification of scientific theories in his book The Logic of Scientific Discovery (2).

The ideas of the early Popper originated from his critical attitude toward attempts at a theory of science, undertaken by logicians of the Vienna Circle, and are characterised by a strict demarcation between logic on the one hand and biology and psychology on the other hand. According to early Popper, psychology should be eliminated from the analysis of scientific knowledge (2, p. 31). This requirement has been considerably attenuated in his late writings, in which he has conceived of science as the latest innovation of the universal process of evolution of knowledge. The actors of the process are equally amoeba and Einstein. It may not be exaggerated to say that the differences between the early and late Popper are no less important than the differences between the early and late Karl Marx. However, while the latter claim is generally acknowledged, the former one escapes Popper´s followers and admirers. Popper never admitted something that should have been, in fact, the most obvious corollary of his critical realism: that he himself was occasionally wrong and that his views were, quite naturally, evolving. In this way he has, involuntarily, substantiated **a reinterpretation** of his falsification theory: Science as a whole is progressing by way of trials and errors, of generation and falsification of hypotheses and generation of new hypotheses, but the scientist as an individual behaves in accordance with his/her biological outfit: he is a mythophil, he sticks to his beliefs, he is subjected to self-deception, which may be a dominating characteristic of intellectuals. (This idiosyncrasy was well known to Popper´s colleague Imre Lakatos, as related by

Donald Campbell and reported by Werner Callebaut (3, p. 92)). The case of Popper is paradigmatic for culture: Tenacity of the individual in keeping and protecting one´s own beliefs, which have been acquired early in life, is **an essential constituting element** of culture.

An unfortunate legacy of Popper´s early writing, ensuing probably from his critical attitude toward the ambitions of the Vienna Circle, and carried over through his later work, was his claim that what matters in science are theories and not concepts and definitions. In his book on the theory of democracy Sartori has criticised Popper´s underestimation of the necessity to clearly define the term "democracy", which may be exploited by Marxists to substantiate their confusion and misuse of the term (4) and a similar argument holds for Popper´s vagueness in operating with the term "totalitarianism" which he has applied even to his analysis of events of antiquity (5).

Surely, scientific research can be productive with hypotheses in which concepts are fuzzy or have been defined implicitly. This holds, however, for **instrumental science,** conceived of as a tool for accumulating new knowledge, particularly in the service of technological exploitation. For **conceptual science,** aiming at understanding phenomena and at aesthetic satisfaction from finding order and harmony - of which discourse and the communication of understanding represent the inseparable parts - lucidity of concepts is a basic requirement. When concepts are clearly defined, some questions turn out to be ill-posed ones generating insolvable pseudo-problems (6).

Conceptual clarity is desirable not only in scientific communication but in any reasonable discourse. An intelligent discourse should start with a demarcation of concepts to be used. It appears illuminating to distinguish two kinds of concepts: **discursive concepts** (which should be distinctly defined) and **instrumental concepts** (which may remain fuzzy or implicit).

The present study is based on the following definition of culture: Culture is a set of behavioural practices of individuals belonging to a community which are transmitted from one generation to another by non-genic mechanisms. The basis of these behavioural practices is the social construction of reality by the community by means of religion, philosophy, arts, science, humanities. Other components of culture are physical culture, the culture of everyday´s life (morals, etiquette), sports, games (and plays) and manners of communication within the community and between communities. In order not to make the concept too extensive, culture does not encompass industrial production, economic activities and political behaviour.

2. The hierarchical structure of culture

The evolution of nature is the evolution of cognition. Organisms can survive in their environment, both natural and social, only by recognising it and, due to the recognition, they react in a manner which assure their dynamic stability, **onticity.** Survival is a criterion of the correctness of cognition. Upon the unlimited amount of things and relations, the organism as a cognitive subject imposes a **cognitive grating**, a sieve, by which it simplifies the world and makes of it a consistent image. This image enables the organism to orient and act in adequacy with its interests. Such a representation, specific for each biological species, we call **reality.**

In man, concepts represent important constituents of the cognitive grating. As concepts change, the grating changes as well and, consequently, reality becomes different. The concepts belong to reality, not to the world (7). They are nothing but purposeful human constructions. Due to concepts, human reality is hierarchically structured. This enables continual refinement of cognitive gratings, incessant accumulation of new knowledge, without overloading the brain with unmanageable amounts of information: hierarchisation of knowledge consists in the creation of more complex cognitive structures, with ever more knowledge becoming implicit, embodied in cognitive structures; it means an increase in accuracy of cognition with a simultaneous erasure of large amounts of information which have become subsidiary and redundant.

The notion of culture should be comprehended in this way: it is an expedient human construction. The same holds for the classification of cultures. On one hierarchy level of reality, there is just one culture, specific for the species *Homo sapiens*. At another level, Huntington distinguishes eight cultures - he calls them alternatively civilisations (8). European culture is but one at a specific level of hierarchy, and, considering diversity of levels, this statement is not in contradiction with another one, according to which there exist 35 independent European cultures (9). **Taxonomy of cultures** has its analogy in biological taxonomy, which, however, benefits from the fact that, at different levels of hierarchy, different terms are being used. Incidentally, Huntington´s two terms, civilisation and culture, may be a step forward, if used consistently for classification at distinct levels. In addition, it may be advisable to use the noun always with an adjective, such as regional culture, national culture etc. It seems clear, however, that, at the present state of cultural sciences (and, for that matter, of the biology of culture), any taxonomy of cultures must be as artificial as had been biological taxonomy before Darwin. It cannot be otherwise: the theory of culture is yet awaiting its Darwin. But just as Linné´s biological taxonomy had been useful for Darwin predecessors, it is appropriate today to distinguish and classify different cultures, however arbitrary the classification may be. In order to understand our social world (a conceptual aspect) and in order to act in it more or less reasonably (an instrumental aspect).

In his seminal paper, Huntington has considered European culture as one of two variants of Western culture, the second one being the culture of North America (8). As an alternative, North-American culture may be viewed as a subset of the set of European culture - this is the view adopted in the present analysis. (But it may also be worth to scrutinise the possibility that the cultures of contemporary Europe and that of North America have diverged so much from their common ancestor that they may represent two distinct civilisations.)

3. The biological basis of human culture

Culture is not specific to *Homo sapiens*. Elementary forms of non-genic transmission of behavioural patterns from one generation to the successive generations occur in birds, mammals and, most conspicuously, in man´s closest relatives, chimpanzees. For a species living in a complex and

variable environment it appears advantageous, adaptive, to have such a faculty. Thanks to a nervous system with sufficient memory capacity, units of non-genic, cultural transmission, **the memes** (10), are generated and become stabilised by horizontal expansion. They subsequently survive death of their individual carriers by having been vertically transferred to their progeny. In human cultural evolution, memes organise into more complex units, institutions, which themselves are capable of additional self-organisation and spreading. Both the memes and the institutions exhibit autonomous complex dynamics which is, to a considerable extent, independent of interests, intentions, or will of their human carriers.

To allow fixation of memes, the genetic outfit of a biological species must be flexible enough to enable satisfaction of a specific biological need by a number of related alternatives. To put it metaphorically, the genetic determination of behaviour must be stated in quite abstract terms each of which becomes concrete only by being specified by an appropriate meme. In analogy with genetic loci, which can adopt two or more alternative alleles of the gene, the existence of species-specific, genetically determined, and perhaps not too numerous, **cultural loci** may be envisaged. Each of them would be vacant and "fulfilment-seeking" until being filled in by a locus-specific meme. The number of "alleles" of the meme would be generally high, but the meme could only be picked up from the restricted meme pool of the specific cultural environment. As an example, a cultural locus for "a search of transcendental order" could be alternatively occupied with a meme of scientific causality, of transcendental meditation, or of belief in personal God, the latter being Jehovah, Allah, Christ, Buddha etc. depending on the availability of the meme in the meme pools. A cultural locus for "aggression" would carry alternatively the memes of militancy, of political violence, of scientific obstinacy, of religious fanaticism, of artistic creativity, of passionate sporting etc.

The role of culture is not only to enable intergeneration transfer of acquired experience by non-genetic means. Its different, equally important role is to promote formation of social groups, to confer upon every group strong internal coherence and stability and to equip it with conspicuous markers to signal the group's distinction from other groups. In the case of intergroup conflicts, culture provides strong motivation for intragroup solidarity and for intergroup aggression and fighting. All living beings are essentially "fanaticists". Simple organisms with no ability to learn are "absolute fanaticists": if we take a mutation in bacterium for a modified hypothesis about the environment we can say that the mutant would sacrifice its life to prove its fidelity to the hypothesis. As aptly put by Popper, man, contrary to simple organisms, does not need to die for his/her hypotheses. But human beings are far from being Popperian rationalists, eager to expose their own hypotheses for testing and ready to replace them by new ones. Human beings are **mythophils**: they firmly stick to their beliefs which have been implanted into them by their specific culture.

A unique biological feature facilitates this man´s qualification for culture: the human infant is being born prematurely. In contrast to other mammals, fetal patterns of brain growth continues in man in the first year of life (11). In variance with the firmly held dogma stating that, just as in other mammals including non-human primates, neither in man there is any postnatal neurogenesis, it has been found recently that neuron number continues to increase after birth and it doubles in the

developing human cortex between 15 months and 6 years (12). Whereas the morphological development of the brain in other animals takes place in the constant environment of the maternal body and is essentially determined by the developmental genes, the construction of the human brain is being substantially affected by the memes of the specific culture into which an infant has been born. Apparently, not only "software", but also "hardware" of the human brain may be provided to a considerable extent by culture. Even though observations on psychological **imprinting** in humans are scarce (13), a hormonal imprinting of infants with consequences persisting into adulthood have been well documented (14). Important for imprinting of symbolic aspects of culture, such as values and ideology, may be human puberty and the time shortly after puberty which Lorenz has been inclined to consider as a distinct imprinting period of human cognitive ontogeny. It is a period of abstract, symbolic object-fixation, which, according to Lorenz, can take its full effect only once in an individual´s life and which determines the conditioned stimulus situation releasing a powerful phylogenetically evolved behaviour which he named **militant enthusiasm** (15, p. 230).

Different cultures provide their members with different, **culture-specific reality**. When imprinted, it remains almost unalterable for life. If the barriers between different cultures are strict and impermeable, the members of different cultural groups may differ almost as much as do differ biological species. Lorenz has named this phenomenon human pseudo-speciation, referring to Erik Erikson who had invented the term (15, p. 67). The single biological species *Homo sapiens* would consist of a number of **cognitive pseudo-species.**

4. Evolutionary superiority of European culture

Biological evolution is being driven by Darwinian mechanisms of variations and selection. Despite some attempts to interpret cultural evolution in different, Lamarckian terms, cultural evolution was in fact, until recently, just as Darwinian as biological evolution. However autonomous and robust may have been, the dynamics of memes and institutions, a generation of new memes was not much different from the essentially random variations at the gene level; new behavioural elements, new ideas, new fashions etc., arising in the process of trials and errors and competing with each other, were sieved and ordered by selection. The larger was the number of alternative memes´ "alleles", the more efficient was the selection and the more rapid was the evolutionary progression.

In the present state of human affairs, Huntington´s taxonomy of cultures appears most useful both conceptually and instrumentally. In his taxonomy, European culture represents a distinct taxonomic unity. From the biological point of view, European culture may be designated as evolutionary superior to other cultures. It should be stressed that this statement **is not normative**, but exclusively descriptive.

What characterises European culture and makes its distinct from other cultures? Behavioural patterns, customs, ways of living of the European nations are so diverse that it may be impossible to find of them any common denominator. It has been therefore customary to search for unity more in

the spiritual field. Since many culturologists take religion as the most outstanding, differentiating feature of cultures, it has been common to see the unity of European culture in its Judeo-Christian tradition. Such a view neglects or underestimates its pre-Christian and extra-Judaic parentage. Nowadays, European culture is often juxtaposed to Confucian culture by pointing out to European emphasis upon supremacy of human individual over collectives, on his/her freedom and autonomy, on the universality of individual human rights. It is commonplace to speak of rationality of European culture.

All such characteristics of European culture are questionable. A cardinal argument opposes them: experience with Nazism and Communism. Were they but fluctuations, or aberrations of European culture? What happened to the respect for the individual, to the Christian tradition of love of one´s neighbour, to universality of human rights, to rationality? Nazism and Communism have not been a mischance, perverse mutations, quite to the contrary: they have been consequent and ineluctable culmination of two parallel currents of European thought (16, 17). And also a work of its spectacular utopia-generating propensity.

To grasp the essence of European culture we have to turn to its roots: the birth of European philosophy in Greece 25 centuries ago. Until then, all human cultures perfectly fitted the mythophilic nature of the human animal living in groups. They provided distinct myths to every group - a consistent, total, indisputable, socially-binding explanation of the world. In the specific conditions of ancient Greek democracy a unique discovery was made at that time: an apprehension that a human being may afford to doubt the explanation of the world which he/she got from his/her parents and which is shared by his/her social group and to come up with his/her own truth. After the discovery of fire this has been probably **the second greatest discovery** of mankind. Many more centuries must have since passed until man has admitted that his/her truth is not a unique one and that other people have grounds for other explanations and other truth. But the essentials had been accomplished at this very moment of the birth of philosophy.

This discovery has enabled the co-existence - and more: interactions - of different world views **within a single social group.** It was just a bit later that Plato could come up with formulations of the substantial conceptual dichotomies: matter vs. spirit, body vs. mind, idealism vs. realism, nominalism vs. essentialism, rationalism vs. empirism, causality vs. contingence, individual vs. community. It is **this very dichotomy,** persisting up to our days, along with the legitimate plurality of views within a group, that has constituted the essence of European culture. It makes it unique among other cultures. It has given birth to modern science - another, the third, essential feature of European culture. The fourth of it, democracy, has been another invention, a logical outgrowth of intracultural polymorphism.

There are these four features that are responsible for the fact that European culture has been generating so many memes to be selected from and has accomplished incomparably more trials and errors than any other culture. The evolutionary progression was quick, in fact - self-accelerating, but its path was neither simple nor inexpensive: from crusades, through religious wars up to the totalitarian utopias and the massacres of the 20th century. Despite the heavy price, an evolutionary path upwards: toward more knowledge, toward more tolerance, toward more rights.

A successful evolution.

Probably, too successful. A threshold has been reached behind which all may become different.

5. The end of cognitive pseudospeciation or the global conflict of cultures?

The biological makeup of man has been appropriate for living in small non-anonymous groups. Such had been the groups at the dawn of human cultural evolution. Every group had had its own culture. In the course of cultural evolution, the size of groups has been increasing and so has been the number of people belonging to the same culture. The process goes on. In Europe, regional cultures are being replaced by national ones and the latter serve to sanction Nationalism. At the same time, political integration will undoubtedly bring about a further homogenisation of European culture. It is logical to continue in extrapolation: economic globalisation may entail globalisation of culture, a rise of a single culture that would be common to all mankind. Again, this is not a normative statement, it only describes the conspicuous trend. Normatively, the ethologist Eibl-Eibesfeldt has warned against a global civilisation which would reduce polymorphism and narrow adaptation capacity of mankind (18).

A biological counter-argument may be put forward to oppose such a cultural monopoly: man not only does need to belong to a group, he/she has also seems to instinctively require for his/her satisfaction a demarcation with respect to other, alien groups. Group homogeneity of mankind would be possible only in the case of the necessity to confront other groups, e.g. extraterrestrial civilisations. Besides this somewhat utopian counter-argument another one may be more realistic: cultures are resistant toward infection by other cultures. According to Lorenz, it may even be highly dangerous to mix cultures, because there is a balanced interaction between all the single norms and to kill a culture it is often sufficient to bring it into contact with another (15, p. 225). Yet, single, particularly virulent memes can be transferred from one culture into another, even if hybridisation of culture is impossible - cultures are not individuals that may sexually recombine. A meme, which arose in European culture and has successfully infected other cultures is the meme of experimental science. Exceedingly virulent of its memes seems to be a meme (memes?) of a particular kind of mass entertainment; its (their) spread across the globe has provoked a well-founded uneasiness or protests of many intellectuals world-wide. On the other hand, the European conception of human rights, which, since the U. N. Universal Declaration of Human Rights in 1948, have been considered to be universal, is now being questioned by other cultures, as it may be incompatible with them.

But the main argument is provided by the present situation of European culture itself. A large polymorphism of memes and self-acceleration in their generation and interactions has brought it into a state in which the speed of the autonomous dynamics of memes and institutions has become too high. It appears that Darwinian principles of selection, which have hitherto enabled at least a partial adaptivness of European culture, its consistence and commensurability with human biological and psychological equipment, are ceasing to be in operation. Culture has never been a conscious work of man and neither has it been steered by man, but the selection mechanisms have somehow

automatically assured that it has been serving, to a major extent, the long-term interests of the individual and the community. As aptly put by Lorenz, “historians will have to face the fact that natural selection determined the evolution of cultures in the same manner as it did that of species” (15, p. 224). Culture, up to a certain complexity, may carry with itself a rationality superior to the individual rationality of man. A new state of affairs, **supercomplexity**, however, may no longer be rational. The incessant process of self-acceleration resembles more and more a cancerous growth which an organism cannot control at all.

Science is, by its results, a supra-cultural phenomenon, but as an institution is anchored in every particular culture. The same holds for its unwanted and spoiled child, technoscience: an upshot of total instrumentalisation of science and its enslavement by technology. A dizzy rate of technological innovations perturbs stability of social institutions and may soon bring about fully automated technologies which will make man redundant and will create psychological and social problems of unprecedented complexity.

All this takes place mainly within European civilisation, but affects, by its consequences, the entire world. In those societies with different cultures, which have not been fast enough in catching up with technological expansion, apprehensions are growing that they have little chance to reach technological level and living standard of countries of the European space. This strengthens their own cultural identity and generates animosity toward European culture. The more so as they may wish to avoid menace of destruction by the frenzied speed of changes which psychologically overburden the European man.

The main source of tension between European culture and the other cultures may not be, however, the economic and political success of the Euro-Atlantic countries. It is more profound. It is the very essence of European culture. Its polymorphism of styles and views, its scepticism, its incessant mutability. Even, paradoxically, its leniency toward the other cultures. These features, which may **run counter** biological foundations of traditional culture, must be perceived by other cultures as a threat, each of them claiming its constancy, immutability, indisputability. Huntington´s worry about an imminent clash of civilisations (8) is not an unfounded variation on the theme of doom-saying.

European culture had proved its robustness, a consequence of its polymorphism, in coping with all kinds of menace - as long it had enough time for it. However, the tremendous acceleration of its own dynamics now creates new problems at such a rate that it may be short of time to solve them. Accordingly, the future of European culture will be a struggle with time and for time. Should European culture collapse, by implosion from unmanageable problems or under violent attacks of alien cultures, it may take along into ruins all the other cultures.

References

1 Lorenz, K. (1967) Die instinktiven Grundlagen menschlicher Kultur. Naturwiss. 54, 377-388

2 Popper, K. (1959) The logic of scientific discovery. Harper and Row (First published in Vienna in 1934 under the title Logik der Forschung.)

3 Callebaut, W. (1993) Taking the naturalistic turn or how real philosophy of science is done. The University of Chicago Press

4 Sartori, G. (1987) The theory of democracy revisited. Chatham

5 Baudouin, J. (1989) Karl Popper. Presses Universitaires

6 Weizsäcker, C.F. v. (1977) Die Garten des Menschlichen. Beitrage zur geschichtlichen Antropologie. Nanser

7 Riedl, R. (1987) Begriff und Welt. Parey

8 Huntington, S. P. (1993) The clash of civilizations? Foreign affairs 72, 22-49

9 Liehm, A. (1997) An oral presentation at the conference Culture and Politics. Bratislava, November 1997

10 Dawkins, R. (1976) The selfish gene. Oxford University Press

11 Gibbons, A. (1998) Solving the brain's energy crisis. Science 280, 1345-1347

12 Shaklee, W. A. R., Landing, B. A. H., Raffia, M. S, Hen, J. M., and Hara, J. (1998) Evidence for a postnatal doubling of neuron number in the developing human cerebral cortex between 15 months and 6 years. J. Theor. Biol. 191, 115-140

13 Eibl-Eibesfeldt, I. (1967) Grundriss der vergleichenden Verhaltenforschung. Ethologie. Piper

14 Dörner, G. (1987) Die Bedeutung der hormonabhängigen Gehirnentwicklung für die Ontogenese. Wissenschaft. Z. der Humboldt-Universität, Mathem.-Naturwiss. Reihe, 36, 586-595, 1987

15 Lorenz, K. (1966) On Aggression. Methuen (First published in Vienna in 1963 under the title Das sogenannte Boese. Zur Naturgeschichte der Aggression.)

16 Kovál, L. (1991) Geist und Ungeist in der Wissenschaft des 20. Jahrhunderts. In: Peterlik, M., and Waldhäuser W. (Eds.) Geist und Wissenschaft im politischen Aufbruch Mitteleuropas. Boehlau

17 Kovál, L. (1995) The biology and psychology of the Marxist fallacy. In: Gottstein, K. (Ed.) Tomorrow's Europe. Campus Verlag

18 Eibl-Eibesfeldt, I. (1991) Der Mensch - Das riskierte Wesen. Zur Naturgeschichte menschlicher Unvernunft. Piper