

CULTURE VERSUS NATURE : THE ANTHROPOLOGICAL APPROACH

Alina WIERCINSKA* and ANDRZEJ WIERCINSKI**

This paper should be considered as a comment on R.A. Foley's (1991) modelling of the evolution of cultural behaviors and mental/brain constructs behind them.

Although Foley quotes the psychologicistic and asystemic definition of culture of C.J. Lumsden and E.O. Wilson (1981) that "culture... (is) the sum total of mental constructs and behaviors, including the construction of artifacts, transmitted from one generation to the next by social learning", it serves him only for illustrative purposes. Actually, his approach is intentionally reductionistic in the sense of the purely neodarwinian concept. Thus, the individual mind/brain complex, being an extremely efficient computer of simulations, is considered as the leading object of evolutionary forces; its various abilities which are crucial for cultural behavior, represent a set of independent variables subject to a variety of selective pressures. Consequently, Foley is against any concept of culture as a coevolutionary but separate entity. All the elements of his reasoning are clearly presented in several tables (2.1 -2.7,1991).

Undoubtedly, Foley's conception is very elegant, due to its simplicity and coherence and seems to be endowed with "popperian" characteristics (i.e. aptness to falsification and predictive values, in this case, projected into the past).

Several questions however, for the sake of brevity may be raised, i.e.:

1.1) there is a lack of proper studies on the intercorrelations (which might be positive or negative) between different cognitive abilities of man;

1.2) the reproductive success of the individuals endowed with better developed mental faculties ought to be first demonstrated on the basis of populational samples derived from different cultures;

1.3) how to interpret in terms of Foley's conception the known catastrophic changes in total pattern of various cultures and not only in particular cultural behaviors?

1.4) how to show the constraints which did not allow an ape-like brain to develop in the human direction in the course of several millions of years of its existence (for instance, that of the chimpanzee) or, the long-termed continuity of some local cultures, incessantly confronted with the rapidly changing milieu of other cultures (the example of Gypsies);

1.5) the supposed equation between human mind/brain as a complicated computer of simulations gives a preponderance of cognitive abilities over the functions of decision making (i.e., the emotional and volitional motivations), as well as, there is a lack of an integrative and controlling factor in this vision; in any

* Laboratory of Anthropology, State Museum of Archaeology in Warsaw.

** Department of Historical Anthropology, Warsaw University.

case, it is the human mind/brain which is programming both, the construction of a computer and its operations;

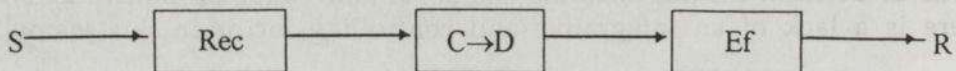
1.6) man and only man is able to violate consciously the neodarwinian principle of maximizing fitness as it was recently shown by T. Bielicki (1985).

Precisely, the last two of the mentioned above questions are the crucial ones for understanding the cultural behavior of man and his nature in particular.

Contrary to Foley's conception, we propose to accept the following definition of culture: "culture is the species specific and socially organized system of conscious adapting of man to his surroundings by means of the artifacts, which aims to satisfy his various needs prompting the arousal of his emotional centers" (A. Wiercinski, 1977).

The notion of the *need* (Table 1) denotes here principally a stereotyped disturbance of the equilibrium's state within the individual due to a deficiency or an excess of a concrete substance, form of energy or a piece of information which compel, in turn, the performance of the activity aiming to adequate satisfying of the need. Consequently, the *adaptive functions*, considered at the level of human individuals and regulated by mind/brain complex, are such reflexes or consciously motivated activities (often a combination of both) which lead to the restoration of the dynamic equilibrium. It is easy to see that the notion of the need may be generalized into the *social needs*. Undoubtedly, new needs can be induced in the course of evolution which, in turn, are prompting the raise of new adaptive functions. The main criteria for adaptivity of cultural behaviors have been formulated by A. Wiercinska (1987).

It should be remembered, however, that the *cultural adaptation* of man proceeds by mediation of the *artifacts*. Their adaptative significance consists in that they constitute, in some way, the extensions or completions of biological organs of man which serve for assimilating, storing and processing of substances, energy and information acquired from the environment, as well as, for reacting versus it. Thus, under the meaning of the *artefact* is understood here any element of the environment which was transformed by man through his *conscious productive activity* and which partakes in satisfying his needs. It is worth recalling that the artifacts may be *biotic or abiotic*. Consequently, the *human personality* (Persona) belongs to the class of the artifacts since it may be considered as the effect of imposing a set of socio-cultural norms (N_{sc}) upon the inborn norms (N_g): $P = N_{sc} + N_g$. The term *norm* denotes any relatively stable psycho-neuronal association between the registrative elements (C) of cognitive centers and estimating elements (D) of the centers of decision making. The norm makes possible a definite activity (R) of an effector (Ef) under the influence of environmental stimuli (S) acting upon a receptor (Rec):



In this way, any human individual is postnatally living under the impact of the two programming devices:

- 2.1) the *genotype*, formed by the associative process of fertilization and,
- 2.2) the *cultural normotype* (of which *Persona* is a well integrated part), formed by the associative process compelled by education and socialization, in general.

However, *Persona* is organized around something which is usually called the *Ego*, what leads us to the problem of the *subject-object articulation*. Thus, the *human subject* is constituted by the individually unique and quasi-point feeling of self-identification at the level of the abstract thinking (the intuitive *Ego*) which is superimposed upon the ape-like self-identification based on a sensory representation of one's own body (the bodily *Ego*). Both kinds of *Ego* are the manifestations of a *double* centralization of the field of human consciousness which makes possible the specifically human functions of *introspection and reflection* ("Man knows that he knows and is able to direct his psycho-neuronal activities"). This concept leads to the notion of the *nature of man* as a deeply polarized creature into the *ape-like side* (i.e. natural) which he inherited from his ape-like but already bipedal ancestor (i.e. the australopithecoid body and part of the psyche) and a *psycho-cerebral potential of humanness* (see: Tables 2 and 3). Within the framework of such polarization one can, therefore, think of three relations:

- 3.1) the animal side overwhelmingly dominates over the potential of humanness,
- 3.2) the animal side dominates in an incomplete way because the potential of humanness "spreads" unequally (a mosaic specialization) and,
- 3.3) the potential of humanness undergoes a "spreading" in all directions and the animal side is consequently subdued to it (A. Wiercinski, 1992, 1994).

The world of *multiple objects* presents itself to consciousness in the veil of the following cognitive experiences:

- the sensory depictions of the perceptions,
- the internal images of the imagination,
- the hallucinated depictions (i.e. internal images converted into the percepts in the states of the altered consciousness),
- the abstract thoughts (i.e. the notional and aniconic intuitions).

The reacting versus it comes out of the two functions of decision making, i.e.:

- the emotional motivation and,
- the volitional motivation.

The general feature of the objective reality is that it makes a stand against transformative activities of man.

From the outlined above polarization of man (who actually is in the condition of ape-man up to this date), the following division of his needs may be inferred:

- 4.1) the *animal needs* of self-protection and reproduction which are shared by man with other animals and which are satisfied with the greatest share of inborn reflexes,
- 4.2) the *specifically human needs* of the generalized cognition of the world

and meaning of life, emotional social contact and the aesthetic ones, which constitute strongly developed animal needs or, they appear as new qualities in evolution (the first two needs); they are satisfied with the greatest share of consciously motivated activities.

In reference to this division, it is possible to maintain the traditional concepts of the material and spiritual aspects of the human culture.

Accordingly, under the meaning of the *material culture* should be understood all the cultural activities and artifacts which partake in satisfying the animal needs of man, while the *spiritual culture* will embrace all the cultural activities and artifacts which partake in satisfying specifically human needs. Thus, the material culture will consist of :

- the instrumental behaviors which aim to acquire, process, store and consume the food and other material and energetic resources,
- the house- and public building with all its equipment, as well as clothes, which warrant the spectrum of biologically comfortable microenvironment,
- the production and use of means of transportation,
- the arms and military activities,
- other possible activities and artifacts which warrant hygiene and health.

In turn, the spiritual culture will embrace

- the methods of acquiring, coding, processing and transmission of information (language spoken and written, science etc.),
- the ideologically regulating systems and managing systems of law and administration (magic or religion, philosophy, customs, forms of government, political parties etc.),
- the systems of education of children and youth and propaganda addressed to adults,
- the artistic activities and products of art.

Despite the fact that these two aspects of culture are feedbacked and that the artifacts may be multifunctional, such division is not so ambiguous and is useful in the scientific analysis because different parameters will be studied accordingly.

However, culture as the specific and most important *ecological criterion* of man represents the *supersystem* being a net of local socio-cultural systems. As any empirical system, the *sociocultural system* will embrace :

- the *material* (corpuscular stuff) consisting of a set of the *artifacts* and a set of *men* acting as their *makers* and/or *utilizers*, who usually constitute a biological population.
- the *energy*, measured by kinds and magnitude of the productive works (*sensu latissimo*) and work performed during the utilization of the artifacts,
- the *information*, measured by the *level of organization*, i.e. by the number, kinds and power of dependencies which connect all the components of the sociocultural system.

It ought to be kept in mind than men and artifacts are not sharply delineated sets since we already know that men act both as the subjects and objects of culture.

The acceptance of the systemic concept for any society with its culture, considered as an organized and self-referential system, inevitably leads to the assumption that it must dynamically interact with the changeable environment and homeostatically counteract against the self-equalizing processes, i.e. against the increase of entropy. Consequently, it must be subject to developmental (evolutionary) changes of which factors might be analogically conceptualized to those of the bioevolution in general (Table 4, A. Wiercinski, 1977). Quite independently, the very similar approach to culture as a coevolutionary entity within the Biosphere has been developed by L.L. Cavalli-Sforza and M.W. Feldman (1981) with remarkable success.

Now, it is the proper time to ask the following question: why the rate of development of tools was so slow in the Lower Paleolithic period and, despite that, men could expand into harsh environments in its later phase ?

The possible answer to this question is not difficult. Thus, from the condition of the discussed above polarization of man into his ape-like side and the psycho-cerebral potential of humanness follows the fact that this potential interacts with *two* environments, namely, the *internal* (animal-australopithecoid) environment of the psycho-body and the *external* environment which is dealt with through the said psycho-body. Consequently, man has at his disposal *two* main directions of cultural adaptation, i.e. :

- he can either change his internal environment and through this change his relations with his surroundings or,
- he can technically change his external environment.

The first transformation can be effectuated by means of the procedures of *initiation* in the shamanistic style (see: Table 5). In this case, the respectively changed psycho-body may be considered as very efficient and many functional artefact.

It is fairly obvious that there have always been mixed strategies. The division, however, also indicates that in particular local culture, or in a global phase of cultural evolution, one of these adaptive strategies can dominate.

In general, it may be postulated that (at least) from Middle to Upper Paleolithic periods dominated the initiatic strategy while the Neolithic "revolution" is the turning point for the future preponderance of the technological strategy (Table 6, A. Wiercinski, 1989). It is evident that the culture based on the latter strategy could progressively evolve only on account of the reciprocal devastation of the Nature. But, how to define Nature, both operationally and cognitively ?

Generally speaking, *Nature* consists of the objects of the internal and external environment of the human subject (as the source of the potential of humanness) which have not been transformed by his cultural activities. Also, it should be incessantly remembered that the *cognitive vision* of Nature is always species specific being based on the *sensory perception*. Otherwise speaking, it is always the result of the specific cognitive reactivity of man which he inherited from his ape-like ancestor. In fact, this perceptually simulated Nature is, to a

greater extent, an adaptive illusion which makes possible the functioning of man as an "astralopithecoid" organism. Of course, the perceptual recognitions of Nature should be independent on the cultural affinities and display the range of the species (like, for example, differentiation of main colors of which names are only culturally biased). Moreover, they should not be confused with the culturally produced models of such natural reality. For instance, the concept of the genotype is not the fragment of the Nature but is only a scientific model represented in the artifacts of verbal description, chemical formulas, photograms etc. which try to simulate something which is natural, i.e. a hereditary substance which is beyond the perception. Even a successful experimentation of the genetic engineering does not signify the achievement of its deeper knowledge. The carpenter knows different features of various kinds of trees and how to make furniture from their wood but, he is not a botanist, for example. Of course, also behind Nature, understood as the perceptual reality, is hidden some other reality. Even our remote forbears were quite well aware of this fact, which does not necessary imply that they reached a correct knowledge about this hidden reality.

Parenthetically, we should confess that we are the advocates of the thesis that any essential cultural change, not speaking about major trends in cultural evolution, are determined by the respective change in the ideological regulation of the society.

The *ideology* is the adaptive response which aims to satisfy the most specific needs of man i.e. the generalized cognition of the World and meaning of life. Both of them consist of stereotyped disturbance of equilibrium in the highest psycho-neuronal centers of the individual due to deficiencies in the respective cognitive-emotional and/or volitional associations (=norms). As regards the less definable *need for the meaning (purposiveness) of life*, we may say that it deals with such associations which establish the *general goal* of life of the human individual. It is the goal which motivates and hierarchizes various activities, performed by the individual, due to his species specific, socio-cultural and individual nature. Otherwise speaking, it is the need of defining the mission of life because of the fact that he is the man, member of a given society and that he has his own unique traits of his personality.

For the sake of brevity, we quote the Tables 7 and 8 for illustrative purposes (A. Wiercinski, 1987).

It is apparent that there must exist strong dependance between the kind of the general model of the World and the promotion of one of the mentioned above three possible ways of "spreading" (realization) of the potential of humanness versus the ape-like (animal) side of man (see: 3.1 - 3.3).

Does this all mean that the Foley's approach to cultural evolution is devoid of any explanatory value? Not at all! We think that it might be applied to the early phases of the evolution of the Hominids (from ape-like ancestors through Homo "habilis" to the early Archanthropus?).

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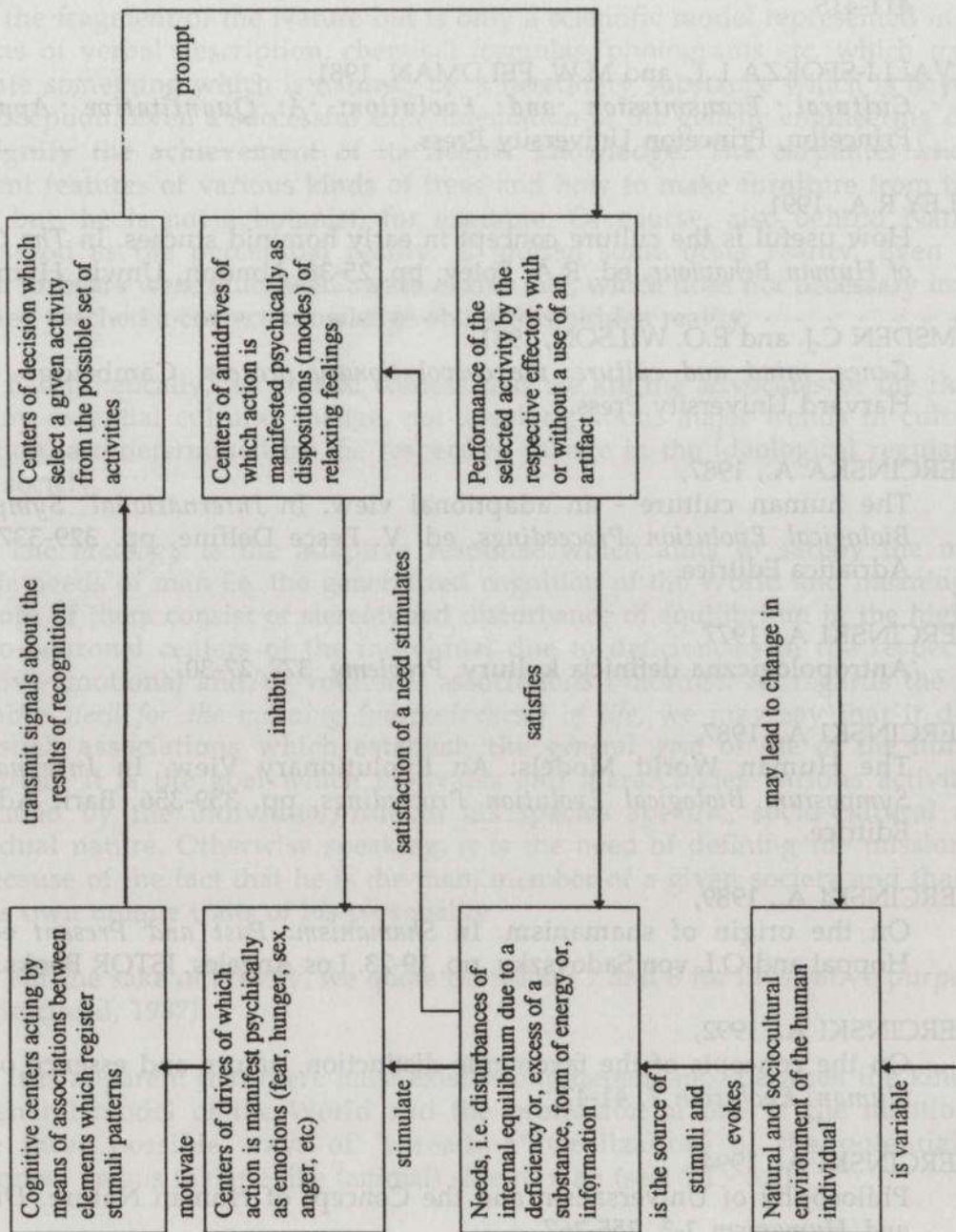


Table 1 : Block diagram of functioning of the human individual from the point of view of his needs.

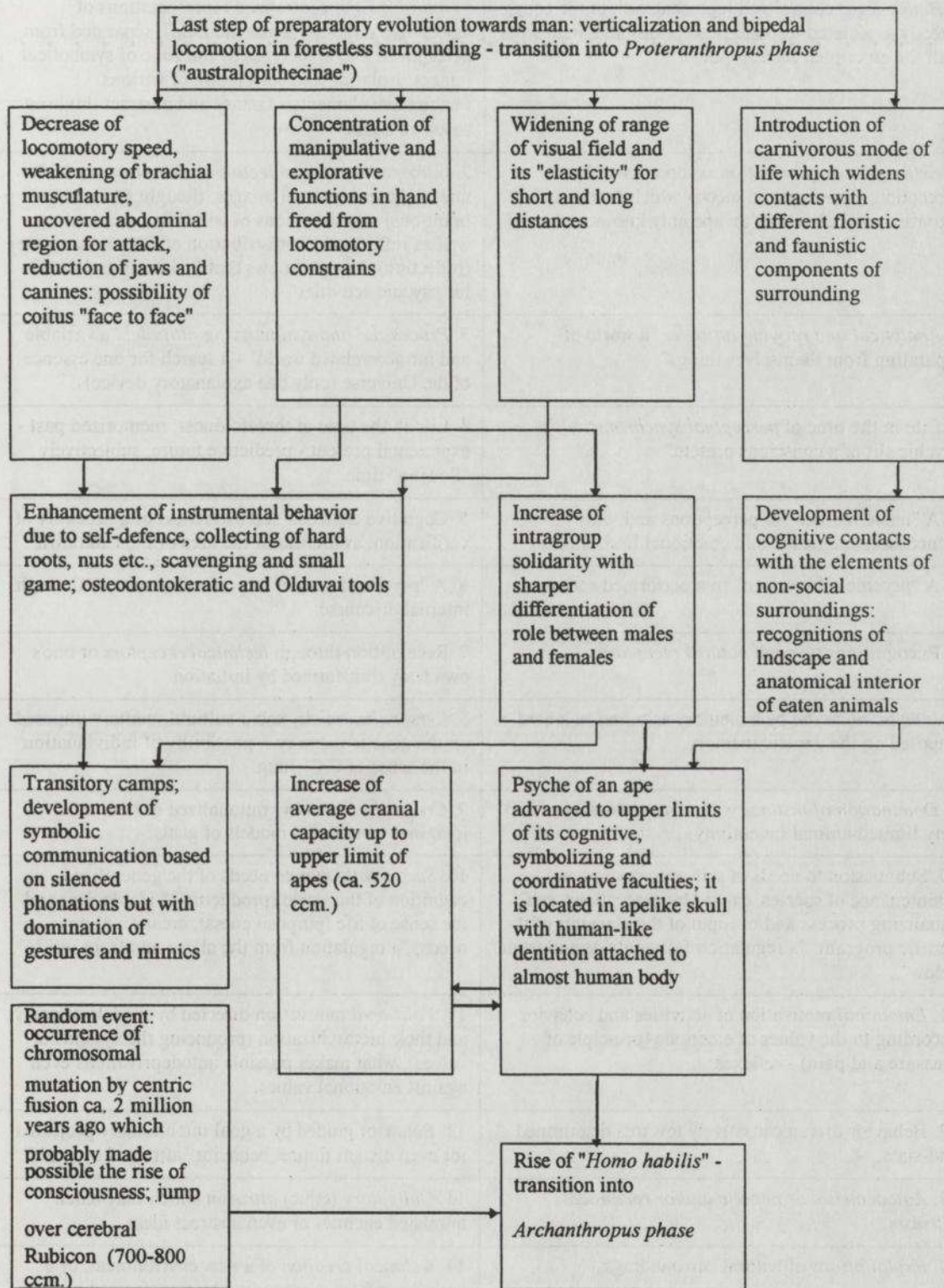


Table 2 : Block diagram showing the possible origin of "Homo habilis".

Ape-like side	Specifically human potential
1. <i>Bodily Ego</i> : centralized representation of the body; directly associated through perceptions and archetypes with the emotional stereotypes.	1. <i>Intuitive Ego</i> : centralized representations of associative relations (semantic field), separated from perceptions and archetypes by the zone of symbolical images; isolating and correlating of various imaginative elements - fantasy and abstract thinking based on signs.
2. <i>Extraspective consciousness</i> , dominated by perception, emotions and moods which "extravertize" activities and behavior; "an ape only knows and feels".	2. <i>Introspective and reflective consciousness</i> which makes present internal images, thought (notional intuitions) and sensations of will (introspection), as well as influences the distribution of associative power (reflection); "a man knows that he knows and directs his psychic activities".
3. <i>Analytical and reifying attitude</i> : "a world of separating from themselves things".	3. <i>Processual and synthetizing attitude</i> : "a variable and intracorrelated world" - a search for one essence of the Universe (only one explanatory device).
4. Life in the time of <i>perceptual synchronicity</i> : "a psychic slit of a conscious present".	4. Life in the time of threefoldness: memorized past - experiential present - predictive future; subjectively "flowing" time.
5. A "naive realism" of perceptions and, only sometimes, diagnostic and emotional hesitations.	5. Cognitive criticism and awareness of a necessity of verification; awareness of the area of the Unknown.
6. A "psychic submersion" in a performed activity.	6. A "psychic distance" to performed activity through internal discourse.
7. Recognitions through <i>natural receptors</i> .	7. Recognition through <i>technical receptors</i> or one's own body transformed by initiation.
8. <i>Individualization</i> by a memory acquired in a herd imposed on the genetic memory.	8. <i>Personalization</i> by socio-cultural memory imposed on the genetic memory + possibility of individuation in the sense of C.G. Jung.
9. <i>Domination of instincts</i> with some spontaneous and very limited animal inventivity.	9. <i>Creative inventivity</i> , rationalized or heuristic: imaginative-notional models of goals.
10. Submission to needs of self-preservation and maintenance of species, caused by perceptions, self-equalizing process and/or input of the elements of the genetic program: "a regulation from outside and from below".	10. <i>Specifically human</i> needs of the generalized cognition of the world (producing of ideologies) and the sense of life (purposiveness); creation of new needs; "a regulation from the above and from inside".
11. <i>Emotional</i> motivation of activities and behavior according to the values of emotions (principle of pleasure and pain) - reflexes.	11. <i>Volitional</i> motivation directed by models of goals and their hierarchization (producing the systems of values), what makes possible autodeprivations even against emotional values.
12. Behavior driven causatively towards determined end-state.	12. Behavior guided by a goal intentionally projected for even distant future: behavior "attracted by goals".
13. <i>Autocentrism or nepotic and/or reciprocal altruism</i> .	13. <i>Obligatory (ethic) altruism</i> which may reach unrelated enemies or even abstract ideas.
14. <i>Exploitations</i> of natural surroundings.	14. <i>technical creation</i> of a new environment, or a <i>withdrawn</i> from surrounding by transformed body by an initiation.
15. Tight bounds with an ecological niche.	15. Drive towards an unknown environment.

Table 3 : The polarized man.

Biological evolution	Cultural evolution
1. biological population.	1. society, socio-cultural system.
2. gens pool of a population	2. pool of cultural memory of a society.
3. gene and chromosomal mutations.	3. random disturbances of the transfer of cultural memory, discoveries and inventions.
4. bioreproduction.	4. intergeneration transfer of cultural memory by education.
5. negative and positive natural selection acting through differential mortality.	5. cultural selection which promotes or eliminates.
6. stable environmental rhythms which generate individual and populational biorhythms.	6. stable rhythms of the cosmic and biospherical environment which synchronize the rhythms of cultural activities.
7. genes flow and the metization process	7. cultural diffusion and assimilation.
8. genetic drift.	8. cultural drift in very small societies.
9. founder effect.	9. cultural founder effect of setting of a new society derived from some maternal culture.
10. isolation in out-breeding process.	10. isolation in the exchange of cultural information between different societies.
11. process of ontogeny.	11. individual development of personality.
12. anagenetic and cladogenetic evolution (succession of phyletic phases or branching into genetically different local populations).	12. anagenetic and cladogenetic cultural evolution.

Table 4 : An analogization of the notions of he theory of biological evolution with cultural evolution.

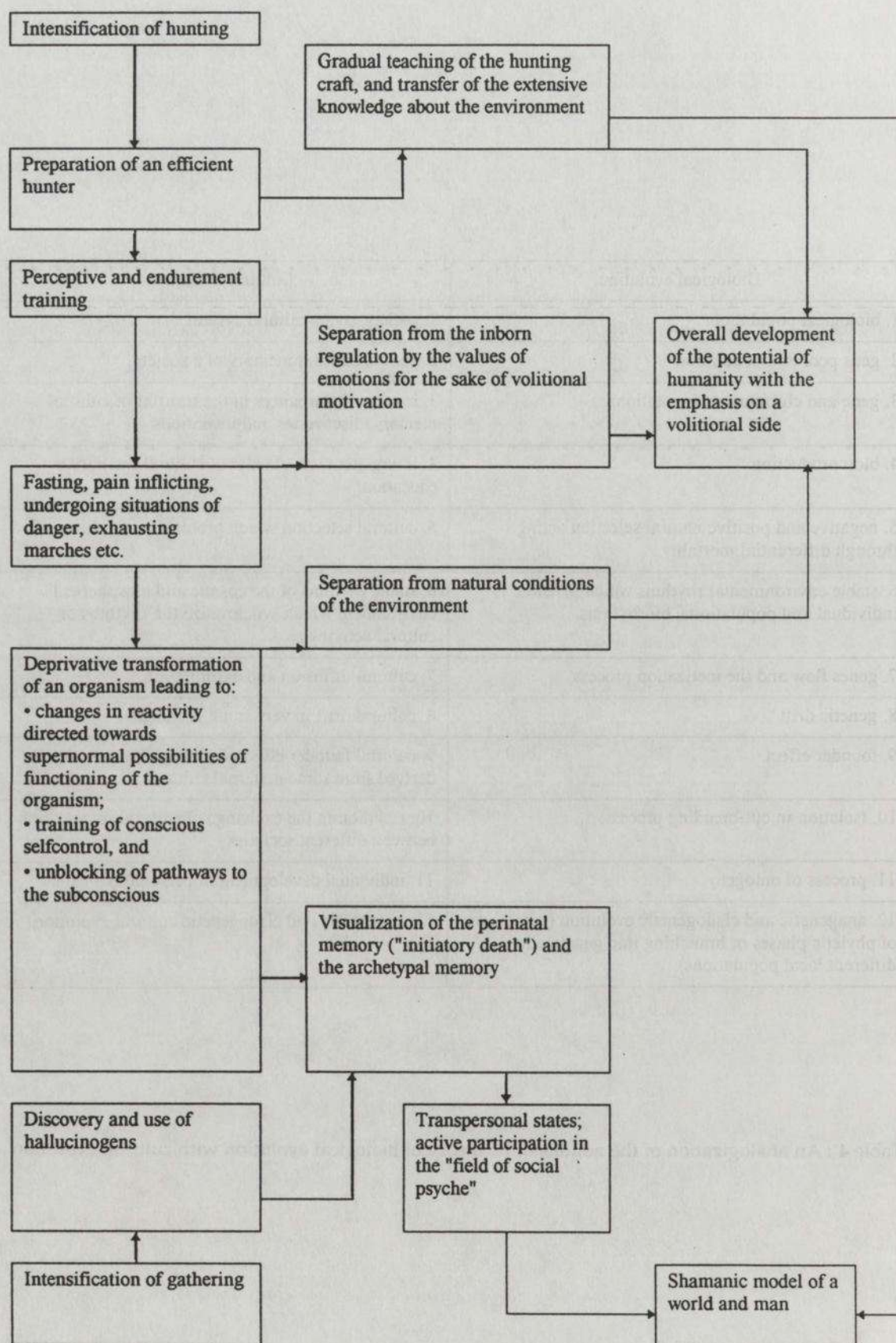


Table 5 : Block diagram showing the origin of shamanism.

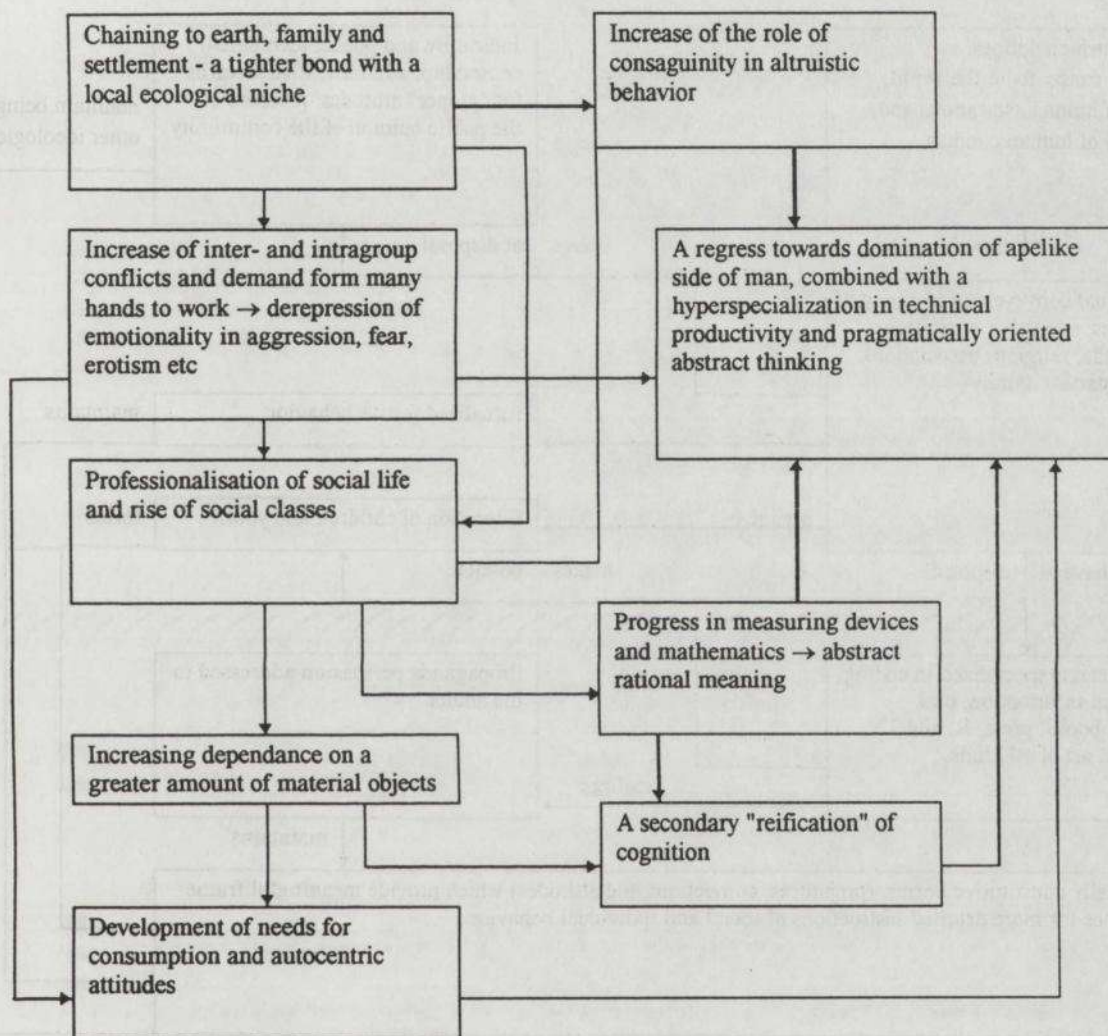


Table 6 : Block diagram showing tendencies initiated by the "Neolithic Evolution".

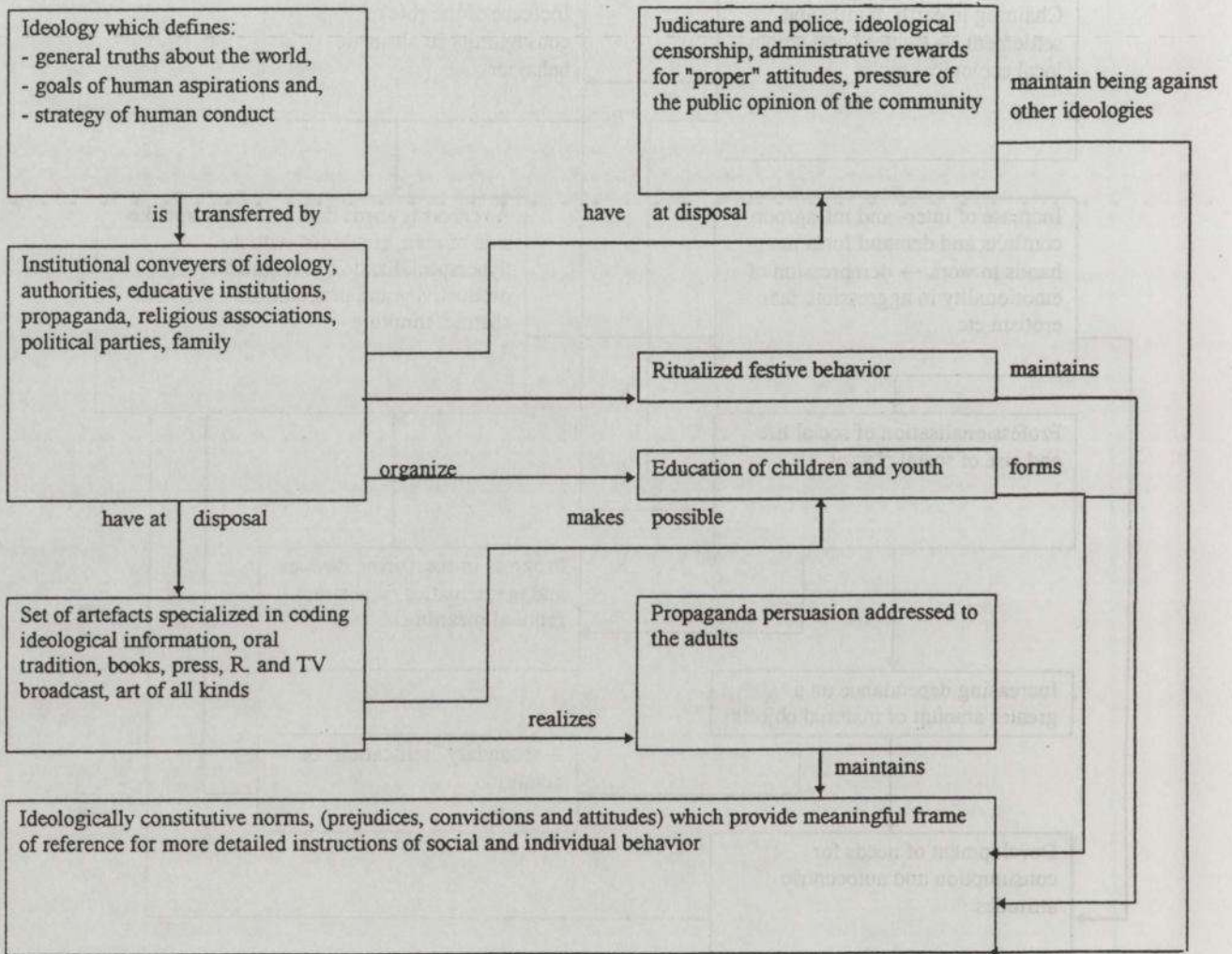


Table 7 : Block diagram of functioning of the ideologically regulating subsystem (IRS).

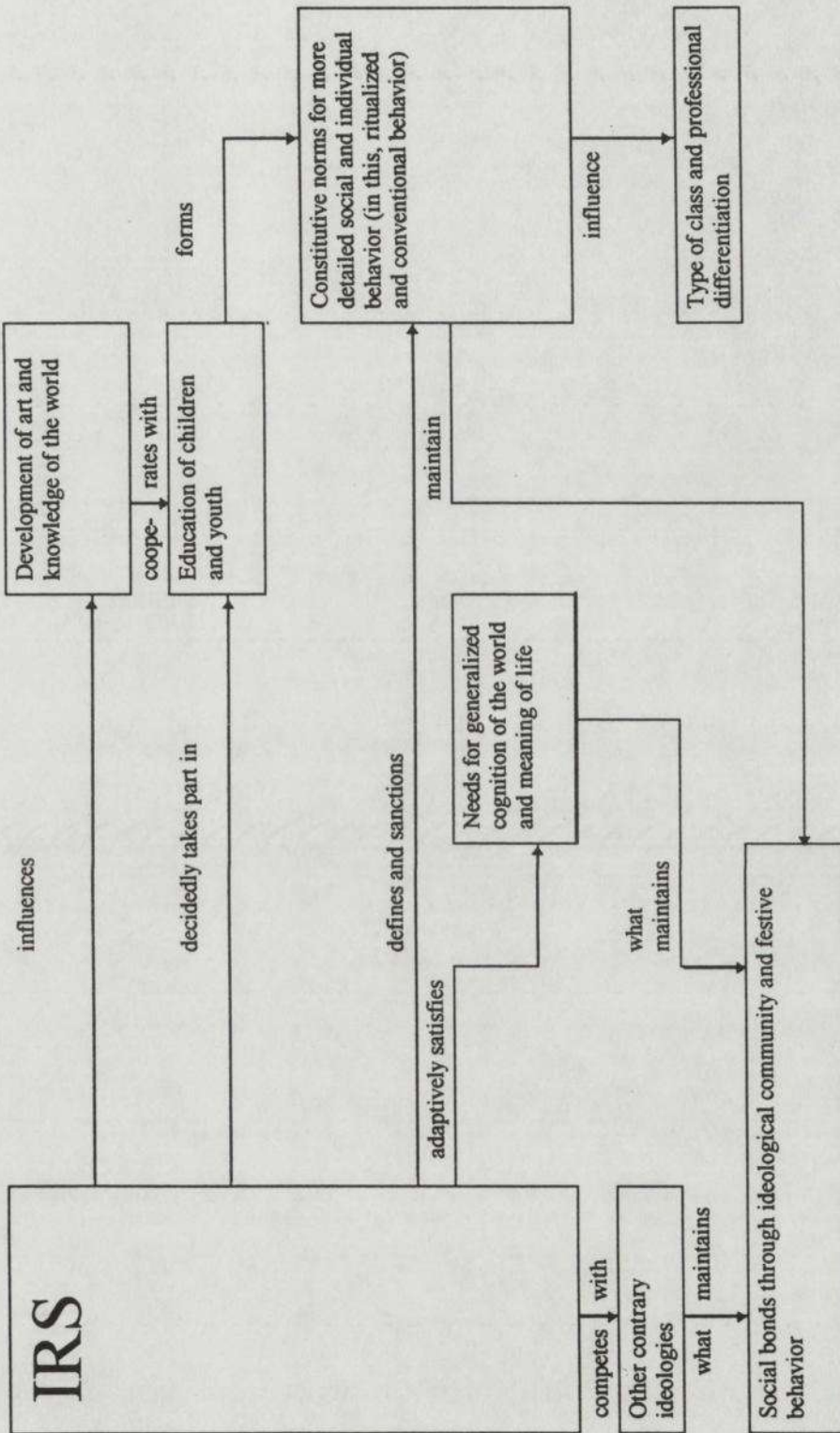


Table 8 : Block diagram of adaptive functions of the ideologically regulating subsystem (IRS).