

Memes of Ethics – A Co-evolutionary Approach The case of Religion’s Memes

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INTRODUCTION

Twenty-five years have passed since the introduction of the term “memes”¹, in R. Dawkins’s challenging book “The selfish gene”. Today, the debate on human co-evolution (the interaction of biological and cultural factors during the integrated evolutionary process of humankind) constitutes one of the most attractive issues in the cognitive fields of Philosophy and Science.

Despite the interpretation efforts of thousands of generations the major questions of man concerning who we are, where we come from, where we are going to, persist unchanged since the dawn of our species. Regarding the availability of concrete answers, contemporary *Homo sapiens sapiens* is as weak as the primitive inquiring minds.

However, as knowledge keeps increasing in geometrical progression, more sophisticated cognitive tools and more complex approaches are applied to the study of anthropological issues.

Nowadays methodologies of reductionism, having created rigid demarcation lines between scientific disciplines, seem to reach dead-end. A synthetic perspective and a systemic approach, where the different points of view meet in a holistic synthesis, tend to replace the fragmentary study of such complex issues as human evolution.

Within this framework, the still fluid and sometimes overlapping ideas of cultural evolution, co-evolution and memetics, constitute a fruitful field of thoughts and debates, helping bridge the gap between the sciences and the humanities.

The present communication refers to the issue of memes in ethics, with emphasis to Religion as a representative system of complex ethical memes, with important social impact. Various peoples have originally linked their ethical system with religion, which has dramatically influenced their social evolution. The complex systems of ethical (or religion’s) memes evolve through time undergoing transformations, which could be studied on the basis of their analogies to natural selection processes.

Claiming that, we assume that the split between beliefs and rationality is a false dilemma, a product of western culture. Actually both modes of thinking,

whether beliefs, generated as they are by the emotional or instinctive responses of man to an inexplicable environment, or reason, structured on axioms and sequences of logical arguments, are outputs of the evolving human brain.

There is no way to distinguish sharply when and how, during evolution, the human creature became *Homo sapiens*, or to describe in details the gradual transition of human population groups from herds to tribes, to societies or to today’s cyber-society. However, the continuous interaction of biological and environmental (also cultural) factors² through time is recognised as the driving force of unlimited brain development, which, in turn, crucially influences endless environmental transformation.

INTERACTION OF BIOLOGICAL AND CULTURAL EVOLUTION – A SYSTEMIC APPROACH

The idea that cultural evolution, could be modelled on the same basic principles of variation and selection that underlie biological evolution has already been discussed by Boyd and Richerson, (1986) and Cavalli-Sforza and Feldman, (1981). However, a shift from genes as replicating units of biological information to a new, higher order, type of (replicating) units of cultural information, achieved thanks to the evolution of the brain, requires the elaboration of new units of analysis. These units are termed *memes*.

When viewed as structures consisting of discrete “units”, both biological and cultural systems seem to share very interesting analogies. These analogies concern the structural elements of the two systems (units of information, genes or memes respectively), as well as their interrelationships.

The minimum requirements for the transformational change of each system include:

- a) *Units of Transmission*. These are the *genes* in their variant forms (alleles) for the genetic system and the *memes* (and allomemes respectively) for the cultural one. The total of the genetic variability constitutes the *gene pool* of a population, while the total of the meme counterparts formulate its *culture pool*.
- b) *Sources of Variation*. Assumed to be random

for the genetic system, these are: *mutation*³ (primary source), *recombination*⁴ and *migration* (secondary sources of genetic variation). The respective sources of variation, however, within the cultural system may either be random or deliberate. *Innovation* could be considered as “*cultural mutation*”, *synthesis* corresponds to genetic recombination, while the migration or diffusion of cultural traits may be equated to gene distribution through spatial migration of populations.

a) *Mechanisms of Transmission. Reproduction*, the genetic mechanism, is achieved through gametogenesis and mating, thus being a mechanism of vertical transmission from ancestors to their offspring. *Communication*, the cultural equivalent of reproduction, includes teaching, learning and imitation. It functions vertically, horizontally and obliquely, it can be reciprocal and its capacity to spread memes is variable. Thus the cultural reproduction displays a higher order of complexity. Whereas in the genetic system the ratio of receivers/transmitters is fixed at 1:2 per generation, in the cultural one the more powerful the communication means, the greater the memes’ vectors and the shorter the transmission time. The broader and faster dissemination of memes, as mass media develop, explains the exponential acceleration of our cultural evolution.

d) *Processes of Transformation*. Biological evolution proceeds through gene frequency changes in populations, which occur under the influence of evolutionary forces, namely mutation, migration, genetic drift⁵ and natural selection⁶.

Thus the interaction the functional background of variation, replication and differential fitness⁷⁷

Differential fitness = ability of the structural units to survive, to reproduce themselves, to be disseminated among many carriers and finally to maintain their stability in favourable environments with of the aforementioned forces, causes the continuous evolution.

If memes are defined as (cognitive) information structures, able to replicate through human hosts (vectors) and to influence their behaviour to promote their replication, it follows that the cultural evolution process is based in turn on innovation and synthesis, migration and diffusion, cultural drift and cultural selection, which all lead to meme frequency changes.

Within this general framework, memes are also subject to “natural selection”, since they vary (due to “mutations” in transmission, mental storage or delib-

erate changes), they replicate in many copies, they are disseminated and they differ in fitness. Phenomena of competition, population dynamics and adaptation of memes are surprisingly similar to their biological counterparts.

RELIGION AS A MEMES’ SYSTEM

Religion is the conviction (expressed in knowledge, thoughts, feelings, will, and actions) referring to the influence of superior forces, which have created the universe and manage the destinies of humans. (*H. de Glasenapp-The World History of Religions*).

In all human cultures religions play an important role. They have evolved over millennia into countless variants as parts of the respective cultures, also functioning as an important factor of social coherence.

Providing easy explanations to existential questions, softening the fear of death, and keeping compact social webs through the provision of various sets of rules and practices, religions crucially contributed to the survival success of populations.

Religions are often better than other meme complexes, (such as science, for instance) at explaining the world’s function on an emotional level. They provide answers to existential, emotionally appealing, questions, creating an acceptable world model. The model provides a certain spiritual satisfaction, regardless of its lack of consistency due to cognitive dissonance. Because religions seldom try to prove themselves empirically, they cannot be disproved either, which further enhances their stability and duration. A religion can spread regardless of the truth or falsity of its claims.

Some of the most powerful and elaborate meme complexes in existence today can be recognised as components of contemporary religious systems.

Religions tend to consist of some basic core memes (e.g. the belief in God(s), surrounded by symbiotic doctrinary memes (ethical systems, disciplined group behaviour etc.), and a wider cluster of related memes (religious narratives, interpretations, holy texts, symbols etc.). This symbiosis has proved effective through time, as it is evident, even today, in our high-tech culture, that the surviving religions still influence everyday life and affect the cohesion of large population groups.

The “God meme” in most religions consists of a number of explicit commandments and pronouncements purportedly attributed to a God. Theistic memes in general, are memes that regulate individual or collective behaviour, including sexual practices and life

style rules (ethic rules) beneficial for the group's successful survival under the challenging external environments (both natural and cultural).

Religious canons consist of theistic memes loyally transcribed from generation to generation. This faithful transmittance among the memes' hosts is an important factor for the endurance of religions through time. In most cases it is achieved through tough commands, threats of horrible punishments, intensification of the feeling of weakness towards supernatural entities. Obedience and rejection of rationalistic doubts support collective behaviour and enhance the fitness of theistic memes, particularly in historical settings and cultural environments which favour authoritarian systems.

From the anthropological point of view, all religious systems have evolved in accordance to the natural and cultural environment of their followers. The appearance of religions in early societies reflects a primitive, instinctive response of man to the empirically acquired environmental challenges. The Animism of primitive tribes, for instance, is not unrelated to the adverse natural surroundings, which provided them with food and energy. Monotheism, with its roots in the Near East, should be linked to the managerial needs of the early agricultural societies. The cohesion of tribes was successfully maintained through the rigid theistic canons, which, demanding absolute obedience to the scriptures and imposing life patterns, actually preserved the links among individuals of the same creed, thus protecting their cultural identity and existence.

Although religious meme complexes are presented as ultimate truths, new variants of memes, spontaneously arising under pressure from transitional circumstances, increase their fitness in such transient cultural environments, by favouring a high rate of reproduction and cultural transmission.

THE DISSEMINATION OF "MUTANT" MEMES (THE CASE OF CHRISTIANITY)

In evolutionary terms, this is the case of Christianity, which has occupied an important place in the evolutionary sequence of Middle Eastern monotheistic religions. Christianity, based on the Old Testament statements, integrated successfully some new options of Monotheism. A softer version of the "unique dominant God" of the Jews and a series of tolerant co-existence practices were adapted at the proper timing, when the self-confident, powerful and vast Roman Empire was collapsing.

Profiting from the general discontent among the

people of that multicultural world, Christianity memes managed to multiply their vectors rapidly. Its recommendations for mutual love, tolerance, altruism etc. offered a suitable setting for the ensuing cultural changes of the era.

The new, "mutant" memes of monotheism had better fitness than the older ones. On the contrary, the lack of fitness of Jewish monotheism, which insisted on a unique version of "spiritual purity" within an inflexible, hardly adaptive, "closed" framework, was the reason why Judaism never became a religion of world-wide influence.

EVOLUTIONARY DISADVANTAGES OF RELIGION MEMES

In the same historical period, the polytheistic system of ancient Greece was, in parallel, widely adopted.

The origins of the variform religion of ancient Greece are to be sought in the specific geographical area, characterised by environmental variability, small independent city-states, intensive competitiveness, mobility and cultural interaction due to commercial exchanges. The twelve-god pantheon reflects the mentality of that prosperous society.

Disregarding the myths about Creation, which after all are neither more nor less reliable and rational than those of other cultures, it should be admitted that the attitudes, traits and behaviour of the Greek gods reflect the spirit of an open-minded and inquiring society.

Considering that a variety of the theistic memes of different religions continued to co-exist for several centuries, the problem of Christian domination over other contemporary religions is challenging indeed. Why did the ancient Greek religion vanish at the same time that Greek culture and language had become widely appreciated? Surprisingly, the linguistic dominance of Greek, which actually provided the very medium for the broad dissemination of memes (also theistic memes), failed to preserve the Greek religion. On the contrary, the Greek language assisted the expansion of Christianity, offering an appropriate means of transmission.

Perhaps the failure of the theistic memes of ancient Greece to pass their properties on successfully may be attributed to their evolutionary disadvantage in that particular shifting historical and social framework.

Even a brief look at the main traits of the ancient pantheon, reveals some interesting points. Gods are ideal entities with human characteristics. At any

rate they are not “perfect”, since many usual human characters are reflected in their personalities (polygamous Zeus, jealous Hera, erotic Venus, cerebral Athena etc.). The features of Greek Gods are “human” or almost human. They hate, they love, they compete for power, displaying human behaviour, attitudes and passions.

Since Gods are constantly involved in human affairs, the human sense of fear or the compelling obligation to obey them is not dominant. On the contrary, often man experiences doubt about the absolute power of Gods, denies their rules and assumes his own responsibilities. (e.g. Prometheus, Odysseus etc.). Additionally, the inter-relationships between Gods, leave space for man to select, make decisions, undertake initiatives and responsibilities, strive, fight, pursue his own choices.

The ancient Greek religion was “anthropocentric”. Its theistic memes carry the seeds of independent thinking, enquiry, doubt, actually the seeds of scientific reasoning.

Such tendencies support a propensity for spiritual freedom and feed a rationalistic mode of thinking, therefore they could thrive in a purely scientific environment, but would be hardly likely to adapt to the cultural environment of the first centuries A.D.. In the historical setting of the declining Roman Empire contemporary society needed an appropriate operational framework, regulated by new universal codes.

The early Byzantine Empire recognised Christianity as its official religion, thus promoting the cohesion of its multicultural society through beliefs and social rules (revised theistic memes) based on the New Testament.

In all epochs, the administrative manipulation of large populations, crucial for the survival of any empire, is based on the blind obedience of individuals to some imposed pattern of authority. (Nowadays, in our developed democratic societies, this sophisticated role has been undertaken by the mass media). At that time the fitness of the “anarchic” Greek theistic memes became less and less successful in their competition with the mutant theistic memes of the Christians. Therefore after a period of coexistence it was inevitable for them to vanish under the evolutionary (cultural) pressures of Byzantine society.

In terms of natural selection there exists a perceivable analogy between the demise of the Greek theistic memes and the mysterious disappearance of *Homo neanderthalensis* after the final evolutionary success of *Homo sapiens sapiens*, the two sub-species having coexisted for a long time.

Likewise Greek religious memes occupy a dead branch on the evolutionary tree of the theistic memes. However, in the same way that many genes of *Homo Neanderthalensis* have been incorporated in modern humans, many memes of ancient Greece are still present in our own society, under the scheme of our contemporary “religion”, rationalistic Science, whose basic axioms, furthermore, are as much a matter of authority as are religious truths.

EPILOGUE

The above ideas are far from claiming their scientific authenticity. The authors are aware that they represent a scientifically unorthodox approach, which might invite criticism from some specialists. However, considering the contemporary international debate on memes, they could challenge an interdisciplinary dialogue within the network of Bioethics, serving as the starting point for a holistic approach, which will take into account the complexity of human evolution. We need to integrate our methodologies, and create new descriptive models in order to bridge the gap between the sciences and the humanities.

The paradigm of Religion as a complex memes’ evolving system has been chosen as the proper one for two reasons: a) Religion is closely related to ethics and its social role and b) there are already some very interesting and elaborated models trying to describe the evolution of religion memes through this systemic approach.

However, if we would like to construct a reliable theoretical framework on the cultural evolution of ethical memes, the challenge to deal seriously with a series of key issues still remains. Clear definite answers are needed: What exactly is an ethical meme? On what principles the hierarchy of meme’s complexity could be structured? Could we distinguish some of the ethic memes in our behaviours, define their content and relate them with cognitive structures? Can we apply successful mathematical models from the area of Biology and population genetics in order to quantify the cultural evolution events?

Some of the alternative answers could change the spirit and the methodology of Ethic Studies, especially nowadays, in the age of Genetics and Information Technologies, when new ethical codes are gradually imposed, usually ignoring the human experience.

As long as technology proceeds with faster steps than the human moral progress, the fear of science manipulation or misuse is not unjustified.

Therefore, any debate which contributes in the

deeper understanding of the humankind's nature and notion and promotes the creation of the contemporary needed ethical rules, is a request of our times.

KEYWORDS Evolution. Cultural Evaluation. "Mutant" Memes.

ABSTRACT The issue of **co-evolution** (interaction of biological and cultural factors during the integrated evolutionary process of humankind) is increasingly present in the international debate among anthropologists. A systemic approach of culture (including ethics) as a complex system, based on the existence, structure, replication and dissemination of "cultural units" (Memes), reveals direct analogies between the cultural and biological evolutionary processes.

Considering that:

- a) Religion constitutes a major cultural trait in all past and contemporary cultures, with major importance for the moral behaviours and the ethical systems; whereas "rationalism" is based on the biological background of humans, linked to the potential of the evolving human brain;
- b) In our evolutionary phase, no definite barriers can be drawn between biological and cultural behaviour and
- c) The exact contribution of nurture versus nature in the evolution of human civilization is far from clear, a co-evolutionary approach, applying the memes theory, is suggested for the interpretation of the interaction between ethics and rationalism, in the particular case of religion's memes.

NOTES

1. Memes were originally described by R. Dawkins as "units of cultural transmission, or units of imitation". The term is related to the greek "ἰβίçόέδ" that means imitation.
2. It is broadly accepted that the "hardware" of beings (their biological background) sets limits to their development at a certain time period. Again, cultural factors, the functional variations based on the hardware abilities, the "software", influence over time the biological profile of populations.
3. Mutation is the process whereby genes change from one allelic form to another.
4. In general, any process in a diploid cell that generates new gene combinations of parental alleles.
5. Genetic drift = random changes of gene frequencies through successive generations, which are observed in small size populations, isolated from larger ones.
6. Natural selection = differential rate of reproduction or

differential fitness of the various alleles in a population.

7. Differential fitness = ability of the structural units to survive, to reproduce themselves, to be disseminated among many carriers and finally to maintain their stability in favourable environments.

REFERENCES

- Hellenic Mythology-The Gods (in greek). Ekdotiki Athinon
- Crimbas, C.: Epekteinontas to Darwinismo kai Alla Dokimia (in Greek). Nefeli (1998).
- Blackmore, S.: *The Meme machine*. Oxford University Press (1990).
- Boyd, R. and Richerson, P.J.: *Culture and the Evolutionary Process*. Chicago University Press (1985).
- Boyer, P.: *Religion Explained*. Basic Books (Preseus) (2001).
- Cavalli-Storza, L.L. and Feldman, M.W.: *Cultural Transmission and Evolution : A Quantitative Approach*. Princeton University Press (1981).
- Dawkins, R.: Viruses of The Mind. Free Inquiry. <http://physics.wise.edu/~shalizi/Dawkins/viruses-of-the-mind.html>. (1993).
- Dawkins, R.: *The Selfish Gene*. Oxford University Press (1976).
- Duram William, H.: *Coevolution-Genes, Culture and the Human Diversity*. Stanford University Press (1992).
- Farouki, Nayla: La Foi et la Raison - Histoire d' un Malentendu. Flammarion, Paris (1996).
- Feldman, M. and Cavalli-Sforza, L.: Aspects of variance and covariance analysis with cultural inheritance. *Population Biology*, **15**: 276-37 (1979).
- Griffiths, Anthony J.K. et al: *Genetic Analysis*. Freeman (1993).
- Heylighen, F.: Memetic Selection Criteria. <http://pespmc1.vub.ac.be/MEMSELC.html> (1994).
- Heylighen, F., Aerts, D.: The Evolution of Complexity. http://www.sepa.tudelft.nl/~afd_ba/hcesmem.html (1996).
- Jones, S.: *The Language of Genes*. Harper Collins Publishers Ltd. (1993).
- Lumsden, C.J. and Wilson, E.O.: *Genes, Mind and Culture: The Evolutionary Process*. Harvard University Press (1981).
- Lynch, A.: *Thought Contagion*. Basic Books (Perseus) (1996).
- Monod, J.: *Le hasard et la Necessite. Essai sur la Philosophie Naturelle de la Biologie moderne*. Editions du Seuil (1970).
- Murphy, Jeffrie G.: *Evolution, Mortality and Meaning of Life*. Rowman & Littleheld, New Jersey (1982).
- Rowman & Littleheld, New Jersey (1982).
- Sperry, R.: *Mind, Brain and Humanist Values (New Views of the Nature of Man)*. University of Chicago (1965).
- Wilson, E.: *On Human Nature*. Harvard Univ. Press (1995).
- Wilson, E.: *Consilience*. Alfred A. Knopf Inc. (1998).

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