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Comment on Radek Kundt's "Contemporary Evolutionary Theories of Culture and the Study of Religion"

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On my desk in front of me lies Radek Kundt's wonderful and badly needed book on *Contemporary Evolutionary Theories of Culture and the Study of Religion*,[1] dealing with one of the most popular approaches in our discipline: evolutionary accounts.

Why evolutionary approaches? Preliminary remarks

"Nothing in biology makes sense except in the light of evolution," wrote the evolutionary biologist and co-founder of the so-called New Synthesis in Evolutionary Biology, Theodosius Dobzhansky (1900-1975), in his famous essay of 1973, opposing creationism in American society.[2]

Today, Dobzhansky's statement and, together with it, Neo-Darwinism (better: modern synthesis)[3] are not only fully accepted in biology, but have become the scientific paradigm in disciplines such as psychology, archaeology and, last but not least, the study of religions. As a result, the last decades have seen a multitude of publications which focused on evolutionary processes in their particular field of research and had a strong impact on the study of religion; for example Matt Rossano's *Supernatural Selection: How Religion Evolved* (Evolutionary Psychology),[4] Roy Rappaport's *Ritual and Religion in the Making of Humanity* (Anthropology),[5] Steven Mithen's *The Prehistory of the Mind* (Archaeology),[6] and Michael Witzel's wonderful book *The Origin of the World's Mythologies*

1 Radek Kundt, *Contemporary Evolutionary Theories of Culture and the Study of Religion*, London – Oxford: Bloomsbury 2015.
2 Theodosius Dobzhansky, "Nothing in Biology Makes Sense Except in the Light of Evolution", *American Biology Teacher* 35/3, 1973, 125-129.
3 Peter J. Bowler, *Charles Darwin: The Man and His Influence*, Oxford: Blackwell 1990, 216-217.
4 Matt J. Rossano, *Supernatural Selection: How Religion Evolved*, New York: Oxford University Press 2010.
5 Roy A. Rappaport, *Ritual and Religion in the Making of Humanity*, Cambridge – New York: Cambridge University Press 1999.
6 Steven Mithen, *The Prehistory of the Mind: The Cognitive Origins of Art and Science*, London: Thames and Hudson 1996.

(Indology).[7] As mentioned just before, these are only a few examples in a multitude of publications which at least confirm the impression that we are just witnessing a development in the humanities which can probably be described best as a process of *Darwinizing Culture*.[8]

Before we go into detail, some preliminary remarks are in order. As far as Kundt's book is concerned, we have to emphasise the fact that Kundt not only critically reviews the most popular evolutionary approaches *per se*, but is also mainly interested in one special subdiscipline of the study of religions: the cognitive science of religion. This restriction is important insofar as Kundt is neither trying to develop his own hypothesis of cultural or religious evolution nor searching for an approach enabling him to reconstruct the origin of religion in prehistoric times.[9]

In tracing his aim to review the most common "theories",[10] Kundt starts with a description of the scientific atmosphere in the nineteenth century, when developmental ideas coined the approaches in nearly every field of research. Those ideas were the natural result of intellectual developments during the era of the Enlightenment, when the focus of interest in all disciplines shifted towards developmental processes. What we witnessed then and have witnessed until today, is the historisation and naturalisation of, first, the philosophy of history, then biology (even if the term was first unknown and only introduced by Jean-Baptiste de Lamarck in 1802), and finally the humanities.[11]

The triumph of this new way of thinking was only explicable after the long period of Christian dominance in scholarship: It was Voltaire (1694-1778) who was able to explicate that history was not identical with the salvation history of mankind related to biblical record, but instead a process of various changes and developments in different political entities everywhere in the world.[12] It was an historian again – more precisely, a philosopher of history – who became the author of the first convincing World History or *Universalgeschichte*. As the driving force behind the manifold changes in societies in history, Marie Jean Antoine Nicolas

7 Michael Witzel, *The Origin of the World's Mythologies*, New York: Oxford University Press 2012.

8 Robert Aunger (ed.), *Darwinizing Culture: The Status of Memetics as a Science*, Oxford: Oxford University Press 2000.

9 Ina Wunn, *Die Religionen in vorgeschichtlicher Zeit*, Stuttgart: Kohlhammer 2005.

10 Strictly speaking, the discussion is not about theories, but only about hypotheses. See *Science and Creationism: A View from the National Academy of Sciences*, Washington: National Academy Press ^{2}1999, 2.

11 William L. Coleman, *Biology in the Nineteenth Century: Problems of Form, Function, and Transformation*, Cambridge – New York: Cambridge University Press ^{2}1977, 1-2.

12 Voltaire, *Essai sur l'histoire générale et sur les moeurs et l'esprit des nations, depuis Charlemagne jusqu'à nos jours*, Genève: Cramer 1757.

Caritat, Marquis de Condorcet (1743-1794) saw automatic processes leading from primitive origins to highly developed societies by means of inherent forces of increasing perfection.[13] In biology, it was Jean Baptiste de Lamarck (1744-1829) who focused on Aristotle's *scala naturae*, which allowed him to explain the processes of transformation from one form to the other. As the means of these processes of continuing change in nature he saw just the same inherent forces of increasing perfection, which Condorcet had already made responsible for political and social change.

Even if Lamarck's hypothesis of *transformism* was not convincing in detail (based on outdated chemistry, the mechanisms of transformism remained unclear), it proved to be enormously influential not only in science, but in the humanities as well and has formed the background to the so-called tacit knowledge behind many concepts in the humanities, and even evolutionary biology, until today.[14]

In particular, Herbert Spencer (1820-1903), who invented the term *evolution*, based his *Principles* on the Lamarckian notion of the inheritance of acquired adaptive changes in organisms, driving organisms continuously towards greater complexity.[15]

It took another fifty years after Lamarck before contemporaries of Herbert Spencer finally managed to solve the problem of the means of transmutation. In his paper "On the Tendency of Species to Form Varieties; and on the Perpetuation of Varieties and Species by Natural Means of Selection", Alfred Russel Wallace (1823-1913) made clear that natural selection is the driving force behind the change of species.[16] Even if Wallace was probably the first to detect the crucial mechanisms of transformism and speciation, it was Charles Darwin (1809-1882) and his influential book *On the Origin of Species by Means of Natural Selection* which at last established the *hypothesis of natural selection* in the scientific world.[17]

We have to keep this in mind when we come to a critical review of Radek Kundt's *Contemporary Theories of Culture and the Study of Religion*.

In his first chapter, Kundt refers to just this period of research, which witnessed the emergence and intellectual flights of evolutionism, when

13 Marie Jean Antoine Nicolas Caritat de Condorcet, *Esquisse d'un tableau historique des progrès de l'esprit humain*, Paris: Agasse 1793.

14 Ilse Jahn, „Biologische Fragestellungen in der Epoche der Aufklärung", in: ead. (ed.), *Geschichte der Biologie*, Hamburg: Nikol 2004, 230-273.

15 Herbert Spencer, *First Principles*, London: Williams & Norgate 1887.

16 Charles Darwin – Alfred Russel Wallace, "On the Tendency of Species to Form Varieties; and on the Perpetuation of Varieties and Species by Natural Means of Selection", *Zoological Journal of the Linnean Society* 3, 1858, 46-50.

17 P. J. Bowler, *Charles Darwin*..., 114-125.

explicating that the Study of Religion as a scholarly discipline owes its existence to the general atmosphere in the humanities in the late eighteenth and nineteenth centuries. In particular, Jane Ellen Harrison and Robert Ranulph Marrett lay emphasis on the fact that it was the influence of Darwin, "that provided the basis for all scholarship … According to him, the study of the origins of religion that Darwinism produced was what distinguished the anthropology of religion from theology and as such it was the defining characteristic of the scientific study of religion during its earliest phase".[18] Even if those early evolutionists contributed significantly to the new discipline, they failed to distinguish between historical development, Lamarckian transformism, and true Darwinian evolution. Only the last is – according to Kundt, and here he is absolutely right – characterized by the following principles: variability, natural selection, and replication/reproduction. Only if an examination of religious phenomena obeys the principles mentioned above can its results be resilient in the sense of scientific research, providing that an evolutionary approach is intended.[19]

Neo-Darwinian accounts

If this standard of a true neo-Darwinan approach is applied to the current hypotheses of religious evolution, the results are but disappointing.[20]

One of the most popular evolutionary approaches affects the thesis of so-called *group selection*. Group selection means that selective forces (the struggle for food, mating partners, hatcheries) do not take effect at the individual level (as the modern synthesis sees it), but instead at group level. Religion means in this context that individuals probably act altruistically for the sake of the group in order to enhance the chances of the group's survival in the struggle for existence.[21] Kundt quickly succeeds in falsifying this notion, which primarily served the purpose of explaining the contradiction between the Darwinian egoistic struggle for existence and the observed altruistic behavior in human society and among many animal species (bees, ants). No group selection accounts, ultimately based on David Sloan Wilson's *Darwin's Cathedral*,[22] meet the criteria of neo-

18 R. Kundt, *Contemporary Evolutionary Theories*…, 12.
19 *Ibid*., 27-32.
20 Cf. Ina Wunn, "The Crux of a Darwinian Approach on Evolution: What Is Evolution and What Did Evolve?", in: Gerald Hartung – Matthias Herrgen (eds.), "Religion und Ritual", *Interdisziplinäre Anthropologie: Jahrbuch* 3, 2015, 83-98.
21 P. J. Bowler, *Charles Darwin* …, 82.
22 David Sloan Wilson, *Darwin's Cathedral: Evolution, Religion, and the Nature of Society*, Chicago: The University of Chicago Press 2002.

Darwinian evolution in so far as "group selection accounts neglect the process of replications of groups (it never is about copies of groups)".[23] To put it differently: if scholars apply the principles of Darwinian evolution, or, more precisely, of Darwin's theory of natural selection, on other than biological entities, the question of the evolving unit arises. This point, however, needs additional clarification.

A century after Wallace, the prominent evolutionary biologist Ernst Walter Mayr (1904-2005) recognised the tremendous importance of the concept of the species.[24] The species is the only real existing entity in biology (genus, familia, or ordo are just entities in a classificatory system). The species, therefore, is of enormous importance, because it is the members of the species as a reproductive community which procreate more or less identically and have common offspring. Whenever, therefore, the concept of Darwinian evolution is transferred from biology (that means the realm of living plants and animals) to a different category (e.g. society), it has to be made clear what the natural evolving unit of the object under discussion is. In a second step, it also has to be clarified which selective forces have an effect on the evolving unit under discussion. Concerning group selection, the question should be: What is a group? Is a group a natural evolving unit? To which (natural, economic, political, social) environment does the group have to adapt?[25]

Only if these questions are answered satisfactorily can a hypothesis of group selection then be drafted in a second step. Up to now, therefore, this endeavour has been neglected and the currently available accounts of group selection do not offer more than "poor metaphor and misleading analogy".[26]

The same is the case as far as *memetic accounts* are concerned. According to the evolutionary biologist Richard Dawkins, *memes* (mental representations) are the counterparts of genes, the carriers of information. Whilst genes pass information about the phenotype of an individual from one generation to the other according to fixed rules, so-called *memes* are supposed to be the carriers of intellectual information. Genes are – according to Dawkins – purely egoistic and only care for their own success, whatever this means for the individual, and so are memes.[27] Religion, therefore, is "a set of co-adapted meme complexes … They are groups of mutually compatible and supportive memes that cohabitate the environ-

23 R. Kundt, *Contemporary Evolutionary Theories*…, 54.
24 Ernst W. Mayr, *Animal Species and Evolution*, Cambridge: The Belknap Press of Harvard University Press ^{5}1973.
25 I. Wunn, "The Crux of a Darwinian Approach…".
26 R. Kundt, *Contemporary Evolutionary Theories*…, 92.
27 Richard Dawkins, *The Selfish Gene*, Oxford: Oxford University Press 1976.

ments of individual minds … On some level, thanks to these benefits, memes are fighting for their survival and reproduction".[28]

Without having to go into detail, it quickly becomes obvious that memetic accounts do not match the standards of a neo-Darwinian evolutionary hypothesis, as it not only remains unclear what the evolving unit might be, but also the physical constitution of the replicator named *meme*. Therefore, it is not surprising that the question of what is evolving and which alteration can finally be observed is similarly ambiguous. The effort of the advocates of memetic accounts "fails, because the cultural changes are not subject to … the elements and rules of the theory of natural selection".[29]

A third approach affects so-called *dual inheritance accounts*, according to Kundt the "prime example of the combination of the concepts of *evolution through culture* and *evolution of culture*".[30] It is not surprising that, even here, the theories of biological evolution, when applied to cultural evolution, are leaving their borders.[31]

In a nutshell, it may finally be stated that all the accounts mentioned above are characterised by one major deficit: they lack a profound biological foundation concerning the mechanisms of neo-Darwinian evolution.[32] In particular, the question of the evolving unit is ignored.

Only this last point remains a little unclear in Kundt's very learned book and probably needs some clarification in what follows.

The question of the evolving unit

In this context, we have to come back to the work of Ernst Mayr. Mayr had begun his career as a biologist when experimental genetics had recently discovered the process of mutation and thus was believed to have found the cause of changes even beyond the boundaries of each species. However, evolutionary biologists had disregarded the basic principles of inheritance, which had already been published in the works of Gregor Mendel (1822-1884) and August Weismann (1834-1914).[33] Within the framework of sexual reproduction, the parental hereditary factors, or genes, do not mix like liquids during the process of fertilisation; instead,

28 R. Kundt, *Contemporary Evolutionary Theories*…, 91.
29 *Ibid*., 93.
30 *Ibid*., 65.
31 *Ibid*., 79.
32 *Ibid*., 124.
33 Gregor Mendel, *Versuche über Pflanzenhybriden: Zwei Abhandlungen 1866 und 1870*, ed. Erich von Tschermak-Seysenegg, Frankfurt am Main: Verlag Harry Deutsch 1995; August Weismann, *Aufsätze über Vererbung und verwandte Fragen*, Jena: Gustav Fischer 1892.

both parental partners contribute a set of genes, which in turn form the chromosomes of the new individual and determine its phenotype. In the subsequent generation, this diploid chromosome set is once again split during the formation of new egg or semen cells, and here the genes of the previous generation are divided randomly. Through this process, no offspring created through sexual reproduction is the exact image of its parents, but the product of a new, unique arrangement of half of the respective parental hereditary dispositions. Thus, not only is the contribution of both sexes equal during reproduction, but, simultaneously, it becomes a fact that each new organism created through sexual reproduction is unique – because the genetic material of the parents is combined differently each time. Simultaneously, the extant organisms represent only a fraction of the theoretical combinations, so that the evolution of life on earth is a historically unique process which cannot be repeated.

However, this also means that creatures of any species are never represented by an individual or an ideal type, but that, instead, the entire genetic property of a population determines the genetic achievement and adaptation potential of the species. Species, thus, are not groups of individuals similar amongst themselves (the typological species concept), but "groups of actually or potentially interbreeding natural populations which are productively isolated from other such groups".[34] Species therefore are "reproductive communities. The individuals of a species of animals recognize each other as potential mates and seek each other for the purpose of reproduction … The species is also an ecological unit that, regardless of the individuals composing it, interacts as a unit with other species with which it shares the environment. The species, finally, is a genetic unit consisting of a large, intercommunicating gene pool, whereas the individual is merely a temporary vessel holding a small portion of the contents of the gene pool for a short period of time. In each new generation, a population's genes are mixed anew and passed on to the individuals in unique combinations. It is this individual which has to prove itself in the selection".[35]

In summary, the biological theory of evolution is based on three principles, which in modern terminology can be formulated as follows: the individuals of a population differ amongst each other in numerous features; phenotypes proliferate in various degrees of success dependent on the conditions of the respective milieu; aptitude is inheritable and passed on from one generation to the next. Evolution, thus, is a two-stage-process: "The first step consists of the production of variation in every generation,

34 E. Mayr, *Animal Species and Evolution*…, 19.
35 *Ibid*.

that is, of suitable genetic or phenotypic variants that can serve as the material of selection, and this will then be exposed to the process of selection. This first step of variation is completely independent of the actual selection process, and yet selection would not be possible without the continuous restoration of variability."[36]

Thus far, we have the characteristics of biological evolution – simultaneously also the basis of a general theory of evolution which comprises the gradual change of any system with memory, i.e. the ability to save information and pass it on to the next generation. For each possible evolving system, therefore, it is mandatory to pinpoint first the evolving unit in order to specify in more detail the evolutionary factors.

The evolutionary study of culture without cultural evolution (EWCE)

The above-mentioned mistakes – the confusion of cultural and biological evolution – can easily be avoided as soon as scholars refrain from discussing culture and/or religion as a means of evolution, but see it instead as a result of the evolution of humankind and its mind. In this context, Kundt refers to those accounts dealing with the biological evolution of humans with a special focus on the development of the human brain and human cognitive abilities. That means that "cross-cultural recurrences of religious phenomena might be explained through constraints of cognitive mechanisms of the human mind acquired in the process of natural selection".[37] By focusing only on the *biological evolution* of humans, EWCE accounts, therefore, avoid the mistake of the accounts discussed above. Here, the evolving unit is absolutely clear: it is the human *species* which evolved, and only together with it (as part of the phenotype) the human brain and the human mind. It is, therefore, the human mind which preserves in some respects even plesiomorphic traits, finally leading to perceptions which we today call religious. Focusing on this approach based on the biological evolution of the human species, EWCE accounts are – again according to Kundt – able to explain "when and in what conditions religion started to form and to try to discover the innate psychological mechanisms of our current stone-age minds and shaped our religious beliefs and behavior in the past, as they do today".[38]

With regards to the demands on an evolutionary hypothesis, Kundt is absolutely right. EWCE accounts correspond to the standards of a neo-

36 Ernst Mayr, *Toward a New Philosophy of Biology: Observations of an Evolutionist*, Cambridge – London: The Belknap Press of Harvard University Press 1988, 98.
37 R. Kundt, *Contemporary Evolutionary Theories*…, 99.
38 *Ibid*., 119.

Darwinian evolutionary approach on humans – and only on humans as a biological species. Here, the discussion starts to become problematic, as far as the science of religion is concerned. EWCE accounts are not evolutionary approaches on religion itself, but only (as emphasised above) on the evolution of humans, even if the context and perspective are rather unusual. But for all this, the really interesting question of how and why religion evolved remains unanswered.[39]

Yet, even if we leave the question of the origin of religion aside, EWCE accounts remain problematic insofar as religion is seen as a fixed entity that has never changed throughout the course of history: religion is seen as *belief* in something that does not exist in the material world. But the notion of religion as a belief system is quite modern and can perhaps be traced back to Martin Luther (1483-1546) at the earliest, or, more probably, only to Immanuel Kant (1724-1804), whilst religion during the Middle Ages, during Antiquity, and especially during prehistory was something very different – it was part of the worldview, and that means it was part of the real existing material world and especially a crucial factor in connection with social organization.[40] And, finally, as comprehensible and correct as Kundt's approval of EWCE accounts is from a methodological viewpoint, such accounts are actualistic. That means that they deny the historical dimension of religion.[41] Not only the human brain, but also religion itself had a history and underwent an evolutionary process.[42] When or why this developmental process started and what religion and the manifold religions shaped (the question of adaptation) remains unclear.

Conclusion

As mentioned and underlined at the beginning of my commentary, Kundt is not interested in cultural or religious evolution in general, but mainly in one special subdiscipline of the study of religions: the cognitive science of religion. Therefore, he revises the main and most discussed evolutionary accounts in the study of religion regarding their explanatory

39 Ina Wunn – Davina Grojnowski, *Ancestors, Territoriality, and Gods: A Natural History of Religion*, Heidelberg: Springer (in press).

40 Ernst Feil, „Religion: Zum Begriff", in: Hans Dieter Betz (ed.), *Religion in Geschichte und Gegenwart* VII, Tübingen: Mohr Siebeck ^{4}2004, 263-267.

41 I. Wunn – D. Grojnowski, *Ancestors, Territoriality, and Gods*…

42 For an evolutionary account on religion as a natural evolving unit see Ina Wunn, *Die Evolution der Religionen* [habilitation thesis], Hannover: Universität Hannover 2002, available online at <http://edok01.tib.uni-hannover.de/edoks/e01dh04/473535297.pdf> [5 July 2016]; ead., "The Evolution of Religions", *Numen* 50/4, 2003, 387-415; I. Wunn – D. Grojnowski, *Ancestors, Territoriality, and Gods*…

value in the context of cognitive accounts according to their theoretical and methodological correctness and value.

In this context, the value of Kundt's book can hardly be overestimated. His analysis of the mentioned accounts is profound and learned. Especially because neo-Darwinian accounts are popular in the study of religions (and Kundt explains why!), it is all the more necessary to tidy up outdated and refuted ideas such as memetics or group selection.

Kundt's *Contemporary Evolutionary Theories of Culture and the Study of Religion* is a wonderful book, most learned, and desperately needed according to the demands of multidisciplinarity. Nevertheless, a few minor critical remarks are in order:

The origin of teleological evolutionary accounts would have become clearer if their origin in Lamarckian transformism had been explained (as they are in this commentary).

The question of the evolving unit should have been discussed in more detail with regard to Ernst Mayr in order to lay emphasis on the reason for the flaws in so many evolutionary accounts.

The restricted range of EWCE accounts should have become more apparent.

These minor reservations, however, should not be misunderstood as fundamental criticisms and they do not diminish the enormous value of the book. This work, up to now, is the only contemporary and critical discussion of evolutionary approaches in the study of religion in the English language (as far as I know), and the only one by an author who is obviously familiar with biology.

SUMMARY

Comment on Radek Kundt's "Contemporary Evolutionary Theories of Culture and the Study of Religion"

This review article highlights an important approach in the science of religion: it not only values Radek Kundt's very learned critique of commonly used evolutionary accounts, including the so-called "Evolutionary Study of Culture Without Cultural Evolution" (EWCE) acounts based on cognitive approaches, but also illustrates the reason for their deficiency – a lack of biological knowledge about evolution, and, as a result, the failure to address the question of the evolving unit. Just this question – what is evolving, and why – is only touched on by Kundt. The enormous value of the book, however, lies in the fact that the popular (but wrong) thesis of an existing form of group selection is rebutted and unmasked: accounts of group selection do not offer more than "poor metaphor and misleading analogy".

Keywords: evolution; evolving unit; evolutionary approaches to culture; neo-Darwinism; Radek Kundt, *Contemporary Evolutionary Theories of Culture and the Study od Religion*.

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