

# **Evolutionary processes in early religion: The psychological interpretation of the earliest indicators of a religious sentiment**

## **Evolutionäre Prozesse in der Neandertalerregion: Die psychologische Deutung möglicher erster Indikatoren für religiöses Empfinden**

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### **Summary**

Recent years have seen a sharp rise in research on the assumed origins of religion, in particular within the new fields of “Cognitive Science of Religion” and “Evolutionary Psychology”. Although scholars from CSR and EP have introduced stimulating theories for understanding the origins of religion, unfortunately they often lack a sound knowledge of paleoanthropological findings and a profound knowledge of (pre-)historical religious phenomena. CSR- and EP-theories like the so-called “Hyperactive Agency Detection Device” (searching always for agents who have caused an event) or “Theory of Mind” (attributing intentions to perceived agents) are well-known psychological mechanisms and precisely studied among modern humans. But applied to early religion, they presuppose some belief in supernatural agents like deities or at least powerful ancestors which is unlikely for hunter-gatherers as comparisons from religious studies and sociology of religion show. The only indicators of a religious sentiment of Neanderthal man and the contemporaneous *Homo sapiens* which are paleoanthropologically observable are burials and manipulations of skeletons of the deceased. Thus, we propose to understand fear of extinction – a very basal emotion associated with the experience of death – as origin of reasoning about caring for the deceased and of religious reflection as well.

## **1 The Origin of Religion: Current Debates**

The recent years have seen a sharp rise in research on the assumed origins of religious activities during the process of hominization, in particular within the newly formed fields of research of “Evolutionary Psychology” (EP) (ATRAN 2002, ATRAN & NORENZAYAN 2004, KIRKPATRICK 1999, 2005, 2006, PINKER 2006) and “Cognitive Science of Religion” (CSR) (BARRETT 2007, BERING 2006, BOYER 1994, 2001, 2008,

GUTHRIE, 1980, MITHEN 1996).<sup>1</sup> Although there have been stimulating and challenging new theoretical assumptions, partly corroborated by empirical findings based on samples of modern humans, many of the postulated anthropological or psychological mechanisms which should have generated religious experience and behavior lack both a sound knowledge of paleontological and archeological findings and a profound knowledge of (pre-)historical religious phenomena. A few examples shall illustrate this criticism:

The main argument which has been put forward by evolutionary psychologists is that the cognitive architecture of modern humans is still the same as it had been for earlier *Homo sapiens* and closely related hominids. Cognitive mechanisms, therefore, which have evolved and proven to be adaptive in the past, still guide present behavior (“stone-age minds in modern environments”, KIRKPATRICK 2006, p. 172ff). One of the mechanisms most often referred to when trying to explain the origin of religious cognition is the so-called “Hyperactive Agency Detection Device” (HADD) (ATRAN 2002, BARRETT 2004). The core argument is that the brain is more apt to attribute something unknown and ambiguous which attracts attention, e.g. the breaking of a twig in a forest, to the most “complex” of distinct possible origins (GUTHRIE 1993). Early hunter-gatherers might not have had the time to check whether the twig had been broken by a (cave-) bear, by members of a rivaling tribe, or only by a gust of wind. Attributing the sound of the breaking twig to an animal or other people as actors (more complex than a physical phenomenon like wind), preparing for fight or flight and then being mistaken would have been more adaptive than simply to wait for what might happen – and maybe die as the consequence of a fatal mistake. Detection of actors even when potentially mistaken is thus crucial to survive and have the opportunity to reproduce.

In general, this argument is true for animals and explains, for instance, the tremulousness and jumpiness of rabbits, who are evolutionarily designed both to be aware constantly of possible predators, and for immediate flight. Among humans, however, agency detection is influenced by other cognitive mechanisms such as the “Theory of Mind” (ToM) (ASTINGTON, HARRIS & OLSON 1988, ASTINGTON & HUGHES in press, BARON-COHEN 1991) which describes the ability of humans to reason about motives, intentions and possible actions of other people, allowing them to predict their behavior.<sup>2</sup> In combination, agency detection and ToM might have led our ancestors (and might still do so today) to assume intentions not only among other people, but also for natural phenomena such as sunrise, positions of celestial bodies or other weather phenomena. GUTHRIE (1993), for instance, has argued that the human cognitive architecture leads man to detect faces within clouds which can then be identified as heavenly

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1 There are also explanations for religious behavior derived from sociobiology, for instance the assumption that belief in a “hidden observer” strengthens morality within groups (BERING 2006, JOHNSON 2005, JOHNSON & BERING 2006, JOHNSON & KRÜGER 2004, SCHLOSS 2008) or the interpretation of religious activities according to the theory of costly-to-fake principles – when religious activities are costly to fake, only believers will perform them. The commitment to the group will result in a stronger cohesion of the religious community and will contribute to the longevity of the group (IRONS 1996, 2001, 2008, SOSIS 2004, SOSIS & ALCORTA 2003, SOSIS & BRESSLER 2003, SOSIS & RUFFLE 2003, 2004). However, such theories already presuppose sophisticated theologies, i.e. complex belief systems, and thus cannot be the origin of religiosity.

2 Rudimentary ToMs have also been observed among primates and seem thus to belong to our evolutionary heritage, too (CALL & TOMASELLO 1998, PREMACK & WOODRUFF 1978, TOMASELLO et al. 2003).

actors responsible for the weather or the different seasons. Other authors like PASCAL BOYER (2001), SCOTT ATRAN (2002) or JUSTIN BARRETT (2004) have followed his argument and have stressed the theory of the HADD as an important reason for the origin of religious experience and behavior.

Beside the fact that we cannot really be sure that assumptions based on the cognition of *Homo sapiens* apply to *Homo neanderthalensis* as well, if the theory of the HADD as explanation of religiosity is confronted with theories based on archeological findings and observations of religious beliefs among recent hunter-gatherers, it is not very plausible that the HADD is indeed the major source of religion (although, admittedly, it might have played a role in the further development of religion). The earliest indicators of a possible religious sentiment among hominids are treatments of the bodies of deceased group members such as the sepultures in the Near East, in France, or most probably at the Neandertal itself, which most probably do not refer to beliefs in celestial deities or even in ancestors and can nevertheless be understood as an expression of the HADD (this question will be discussed below). Furthermore, the assumption of heavenly actors seems to be an implausible explanation of the origin of religion because belief in celestial deities is highly uncommon among hunter-gatherers; such a belief does not meet the religious needs of their lifestyle (fortune in hunting might rather be related to belief in a “Lord of the Animals” and the necessity to reconcile the spirit of the killed animal, *rites de passage* might have been used to initiate the status of a hunter etc. (BELLAH 1973, WUNN 2005, 2009, WUNN & PETRY 2006). Deity and later heavenly deities are not viable until the former hunter-gatherers become sedentary and convert into sedentary farmers. Conflicts, which occur in any society, now had to be dealt with by more complicated strategies of conflict-solving, and one of these strategies is the performance of rituals.

Similar criticism applies to other assumptions of EP and CSR: LEE A. KIRKPATRICK (1999, 2005, 2006) has proposed to understand research on religiosity and attachment from the perspective of EP. “Attachment Theory” (AT) (BOWLBY, FRY & AINSWORTH, 1965, AINSWORTH, BLEHAR, WATERS & WALL 1978, BOWLBY 1969, 1973, 1980, MERCER 2006) in general highlights the importance of secure or insecure attachment experiences with mother and/or father during early childhood as crucial for attachment behavior in later life (e.g. people with insecure attachments experience lower self-esteem, are more skeptical towards other people, are therefore at higher risk to divorce, and to changing their partners more often (HAZAN & SHAVER 1987, 1990, 1994, RHOLES & SIMPSON 2004). Similar to these findings, persons with insecure attachment experiences in childhood are more likely to develop an unstable world view differing from their parents’ beliefs (e.g. apostasy or interest in New Age Spirituality (BUXANT & SAROGLU 2008, GRANQVIST, FRANSSON & HAGEKULL 2009; GRANQVIST & HAGEKULL 2003, GRANQVIST & KIRKPATRICK 2004, KIRKPATRICK 1992, 1997, 1998, SHERKAT & WILSON 1995), while those with secure attachment experiences in the past are more likely to adhere to their parents’ beliefs. If these beliefs were intrinsically religious, in later life the children usually develop a stable attachment to their parents’ god (“correspondence hypothesis”) – although the image of a loving and caring god can also serve as a compensation for negative attachment experiences with one’s parents (“compensation hypothesis”, KIRKPATRICK 1992, 2005). According to KAUFMAN (1981, p. 67), god can be

understood as an almost perfect attachment figure because he is usually seen “as a protective and caring parent who is always reliable and always available to its children when they are in need.”

The attachment system is an important psychological system within the evolved configuration of human behavior, and understanding god as an attachment figure is certainly plausible with respect to the Judeo-Christian image of God and to concepts of God within other recent religious traditions. With respect to the earliest forms of religiosity, however, doubts remain about the plausibility of an attachment-theory approach. Again, when looking for the earliest expressions of religiosity, there is no archeological evidence for belief in personal deities (WUNN 2005) nor are such beliefs plausible in a society of hunter-gatherers (BELLAH 1973, WUNN & PETRY 2006). Attachment has surely been important once belief in divine figures had developed, but it seems to be unlikely to have played a major role in the origin of religion.

A third and last example can be discussed very briefly. Based on studies of meditating and praying persons using neuroimaging techniques, ANDREW NEWBERG, EUGENE D'AQUILI and colleagues presumed that mystical experiences were the earliest expressions of a religious sentiment, because they argue that the human brain seems to be designed to experience such extraordinary states (D'AQUILI & NEWBERG 1993, 1998, NEWBERG et al. 2001, NEWBERG, D'AQUILI & RAUSE 2001, NEWBERG, POURDEHNAD, ALAVI & D'AQUILI 2003, NEWBERG, WINTERING, MORGAN & WALDMAN 2006, NEWBERG & WALDMAN 2010). Prehistoric humans then began to perform rituals to induce mystical states and to develop mythological explanations for their experiences. However, mystical experiences unfortunately do not leave any indicators which could be detected either paleontologically or archaeologically. We will therefore probably never know whether mystical states mark the beginning of religion or not. But since we have at least some evidence that religious sentiments among Neanderthals already existed, claiming that the design of the brain of *Homo sapiens* (who seemed to have expressed religiosity later in the hominization process) essentially led to the development of religiosity seems to be a risky business.

If the described approaches fail to explain satisfyingly how humans began to become the “praying animal” (HARDY 1979, JENKINS 1983), we should now turn to the earliest paleontological and archaeological indicators of religiosity.

## **2 Treatment of the Dead among *Homo neanderthalensis***

As elaborately exemplified by WUNN (2005, 2009), the oldest indication of religious sentiments is the treatment of the dead. Today it is held for granted among anthropologists that Neanderthal man buried his dead (KÖLBL 2005, PETTITT 2002). Even if undisturbed sepultures hardly ever could be verified, in certain cases several indices give strong evidence of intentional treatment of the deceased (MAY 1986). At La Ferrassie / France, for example, it is most probable that several individuals had been buried intentionally, even if there was no account for the presence of grave goods.

The situation at La Chapelle-aux-Saints is similar. At Le Moustier, where in 1908 the skeleton of an approximately fifteen-year-old *Homo neanderthalensis* and – six years later – the remains of a child were excavated, the sparse and imprecise description of the excavation allows only the assumption that the sites under question might have been interments.

In addition, the first Neanderthal man excavated in Germany was most probably buried intentionally. Recently, the remains of this approximately 60 year old man have been the subject of repeated research. In the context of mutual burial customs, several cut marks on the skull gained the interest of the scholars, which were assumed to be the traces of defleshing the skull and the bones of the deceased (... “*die vermutlich bei Entfernung der Kopfhaut bzw. bei der Durchtrennung der Nackenmuskulatur entstanden sind.*“ (ORSCHIEDT 1999, 40, SCHMITZ & THISSEN 2000, 182–185)). Also at Shanidar, Iraq, Neanderthal sepultures were common, even if the presence of grave goods such as the often mentioned gifts of flowers could not be attested. (TRINKAUS & SHIPMAN 1993, 338–340). Beyond that, one has to take into account that a remarkable number of burials in caves have been destroyed, the same being true for sepultures in the open land, which have left behind no traces whatsoever.

On the other hand, even if the circumstances of the excavation are ideal and the research was done with utmost care, there are no traces of any burial customs, cult, or rituals. Obviously, Neanderthal man did not know any customs related to death which surpass simple interments. Above that, manipulations of the corpses could be proven. In this context, the often suggested cannibalism has turned out to be the result of prejudices and a specific intellectual climate during the end of the nineteenth and beginning of the twentieth century.

The same findings take on a very different meaning if the cut marks on the bones serve as proof for secondary burials. Secondary burials, known for approximately 10,000 years, are characteristic for a world-view where death is a process of transformation and passage into the otherworld (VAN GENNEP 1981). This passage into the otherworld has to be safeguarded by rituals, which are certainly not conceivable for hunter-gatherer societies.<sup>3</sup>

### 3 The Origin of Reasoning about Post-Mortal Existence?

Therefore, we may suggest that the custom of fleshing the deceased might in fact be a predecessor of the secondary burials which occur only during the Mesolithic and Neolithic period, without implying progressive ideas about a specific fate of the dead or a certain belief in an afterlife.

When we try to discover the potential motives of the Neanderthals, we have to be aware that we cannot really be sure that their way of thinking was in any way similar

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<sup>3</sup> Rituals in a strict sense are characteristic for early farmers (JENSEN 1948).

to ours. Keeping this problem in mind, the plausibility of the thesis that the maceration of the dead can be understood as an expression of a beginning reasoning about a post-mortal existence depends strongly on the plausibility of the motives for the treatment. On a merely immanent level, the treatment could be understood as a trial to prevent the corpse from being devoured by animals. Another possibility is that the bereaved wanted to protect the dead from being forgotten by their descendants. Such a motive could already be understood as an idea of transcendence – the memory of the dead could have persisted over a couple of generations, which could in turn have been experienced as some kind of immortality (with the bones as visible memorabilia of the dead’s transcendental persistence).

The idea that fear of death is an important source of religiosity is not new. The ethnologist BRONISLAW MALINOWSKI (1925), for instance, considered coping with fear of death to be the central motive for religiosity, and belief in a hereafter and funeral rituals as the most elaborated cultural methods to serve this purpose. Similarly, the philosopher ERNEST BECKER (1973) described the human consciousness of one’s own mortality as the reason why humans began to develop worldviews<sup>4</sup>. However, worldviews like the belief in a hereafter and corresponding rituals require some kind of systematic belief in place. The earliest forms of fear of death which might have originated religiosity were presumably much simpler. Our assumption is that the more basic fear of extinction is most likely to mark the beginning of a religious sentiment.

Fear of extinction is one of the main psychological dimensions of fear of death (FEIFEL 1990, KASTENBAUM & AISENBERG 1972, KÜBLER-ROSS 1969, LONETTO & TEMPLER 1986, OCHSMANN 1993, WITKOWSKI 1990)<sup>5</sup> – among others like fear of the dead and of things associated with death (“necrophobia”), or fear of a post-mortal punishment. In comparison with fear of the dead and fear of a post-mortal punishment (which, again, only makes sense if a religious worldview already existed), fear of extinction is a more basic transcendence-related anxiety because the latter already presuppose the idea of an afterlife. For instance, if the maceration is interpreted as an expression of care for the dead to propitiate their spirit, such a belief would be an expression of fear of the dead (who might arise and torture the bereaved) that is much more complex than a vague notion of some kind of post-mortal existence, and it would already presuppose the idea of such an existence.

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4 Becker’s theory of fear of death and worldviews has psychologically been reformulated as “*Terror-Management-Theory*” (TMT) (GREENBERG, SIMON, PYSZCZYNSKI & SOLOMON 1991, SOLOMON, GREENBERG & PYSZCZYNSKI 2004) – man has to cope with the “terror” of his consciousness of his death which becomes obvious in particular in situations of high “mortality salience”. The TMT has been extensively studied since the late 1980s, and in recent years also been related to religiosity (CICIRELLI 2002, FISCHER, GREITEMEYER, KASTENMÜLLER, JONAS & FREY 2006, JONAS & FISCHER 2006, VAIL, ROTHCHILD, WEISE, SOLOMON, PYSZCZYNSKI & GREENBERG 2010).

5 Fear of death has to be distinguished from fear of dying in particular of pain and long suffering (KASTENBAUM & AISENBERG 1972, OCHSMANN 1993). It is striking that the voluminous psychological research on fear of death (and dying) has not been comprehensively received within EP of religion – although there is a large body of literature about the strong relations between fear of death and religiosity (e.g. EXLINE 2003, FLANNELLY, KOENIG, ELLISON, GALEK & KRAUSE 2006, KLEIN & ALBANI 2011, McCLAIN, ROSENFELD & BREITBART 2003, NEIMEYER, WITKOWSKI & MOSER 2004).

Fear of the dead as described would be attributable to the psychological mechanism of the HADD – hunting misfortunes could, for instance, be interpreted as a punishment because the tribe did not take enough care of the deceased and his afterlife. It is highly likely that the HADD did already belong to the evolved cognitive equipment of humans when they started to reason about a hereafter. But the belief in arising dead still requires a priori the assumption of the mere existence of an afterlife. Hence we suppose that a vague idea of post-mortal existence had probably occurred before the HADD could have been applied to the post-mortal sphere to identifying activities of dead agents. That the Neanderthals began to detect dead actors seems to be implausible also for another reason: If we assume that the Neanderthals felt emotions similar to *Homo sapiens* and began to experience fear of the dead, why should they deposit the bones of the dead which they feared in caves or swales close to, or even within, their homes?

A rudimental fear of extinction, by contrast, is a comparatively simple cognition, but is usually accompanied by strong emotions of grief and sorrow for one's loss. Such emotions can already be observed among animals, in particular primates, but perhaps also amongst dogs or elephants, as recent studies have discovered (ANDERSON 2011, ANDERSON, GILLIES & LOCK 2011, DE WAAL 2009). They might therefore belong to man's evolutionary heritage, too, and might have stimulated the beginning of reasoning about death. The greater cognitive and emotional complexity of humans might then have resulted not only in the wish to keep the memory of the dead alive but additionally in the need to assume a hereafter where their beloved could live on, too.

With respect to the further development of a religious sentiment, it is likely that some kind of funeral rituals were developed, the clearer and more complex the beliefs in a hereafter became. But among the Neanderthals, we do not really have paleontological or archeological evidence of such rituals. The maceration or the burials might have been accompanied by a funeral ceremony, and if such a ritual had existed, it would have been the first activity to be called religious. For reasons derived from the psychology of *Homo sapiens*, such rites de passage would enable the bereaved to cope with their grief (ANO & VASCONCELLES 2005, PARGAMENT 1997, 2007, PARGAMENT, ANO & WACHHOLTZ 2005). However, at the moment, the existence of funeral ceremonies among Neanderthals can unfortunately not be taken for granted.

## 4 Conclusion

Comparing the distinct psychological explanations of burials and maceration among the Neanderthals, it is plausible to understand these practices as an expression of memory of the dead to ensure their remembrance. Although human cognition already included the HADD as an evolutionary heritage, more complex beliefs associated with death seem to be secondary. The HADD could not be employed to detect dead agents until humans had begun to assume some kind of a post-mortal existence. Thus, the earlier fear of the extinction of a beloved person can be expected to be the first rudimentary religious sentiment which initiated the development of religiosity.

## 5 Zusammenfassung

In der anthropologisch-religionswissenschaftlichen Forschung machten in den letzten Jahren vor allem Ansätze aus der sich formierenden „Evolutionary Psychology“ von sich reden, die trotz ihrer großen Erfolge starke Mängel hinsichtlich ihrer Kenntnis der paläoanthropologischen Datenlage und der religionshistorischen Phänomene aufweisen. So können die Theorie des „Hyperactive Agency Detection Device“ oder die „Theory of Mind“ ebenso wenig zutreffen wie die „Attachment Theory“, die sämtlich den Glauben an regelrechte Gottheiten voraussetzen; dies ist aber nach gesicherten Erkenntnissen der Religionssoziologie für Gesellschaften von Wildbeutern mehr als unwahrscheinlich. Da die einzigen paläoanthropologisch nachweisbaren Hinweise auf religiöses Empfinden beim Neandertaler (und beim zeitgleichen *Homo sapiens*) Bestattungen und Manipulationen an den Skeletten Verstorbener sind, wird hier vorgeschlagen, die Angst vor kompletter Auslöschung – eine der aus evolutionspsychologischer Sicht ursprünglichsten Empfindungen in Zusammenhang mit dem Tod – als Auslöser für bestimmte Verfahren im Umgang mit den Toten und gleichzeitig als den Ursprung religiösen Denkens und Empfindens aufzufassen.

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