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Some new developments

The theory of biological evolution proposes an explanation that is valid for all living things. Many features of human beings therefore fall within the explanatory range of this theory, apparently including religious and moral behaviour. This explains why some prominent theologians of the twentieth century have proposed ways of harmonizing the well-established empirical content of this theory with the rational expression of Christian faith[1]. Such attempts show a mature and responsible way of engaging in theological thinking. By overcoming the over-defensive attitude that most theologians adopted in the time of Galileo, theology can become an open, informed and creative dialogical partner in modern debates without losing its fidelity to the Gospel and to Tradition. Even in this mature and responsible form however, theological work in the area of biology needs constant updating. These last decades, researchers have explored new, highly technical and concrete proposals concerning the emergence of religion as a biological phenomenon, but a sustained theological and philosophical evaluation of such proposals is still lacking. In this paper, I will therefore make a first step to address these recent proposals directly. This paper is not about the alleged neural correlate of a God-experience, which some researchers now call neuro-theology[2]. It is rather about explanations that are essentially evolutionary in their logical structure. These explanations, which constitute the main concern of the so-called cognitive science of religion, propose to explain the existence of religious beliefs by referring to nat-

[1] For instance P. Teilhard de Chardin, *Le Phénomène humaine*, Paris 1955; trans. B. Wall, *The Phenomenon of Man*, London 1959; K. Rahner, *Hominisation: the Evolutionary Origin of Man as a Theological Problem*, Freiburg 1965; Pope Pius XII, *Humani Generis*, *Acta Apostolicae Sedis* 42 (1950) 561-578.

[2] For instance, A.B. Newberg, *Principles of neurotheology*, Farnham, Surrey, England – Burlington, VT 2010.

ural selection[3]. In the first section, I will start my inquiry by offering a brief overview of what current researchers have proposed as evolutionary explanations of religion. Broadly speaking, there are three camps: some see religion as completely distinct from biology, some see it as a help for the survival of the species and others see it as a hindrance. In the rest of the paper, therefore, I dedicate one section to each of these positions, offering a critical evaluation of the arguments involved in each case. The main overall question guiding this paper is the following. To what extent are these relatively new, evolutionary explanations of religion plausible? A reply to this question promises to be useful not only for those engaged in the cognitive science of religion, for whom the various arguments may throw light on how to proceed further in their research. It could be useful also for those engaged in philosophical and theological anthropology by highlighting the essential biological substrate of all that is human. It may be useful to highlight at the very start that much of the reasoning and explaining in this area of research depends heavily on what we take religion to be. It is best therefore to see the arguments in the following pages as dealing with one or other feature of the religious phenomenon rather than with religion as a whole, whatever that may be.

I. The logical structure of evolutionary explanation

In the most general sense, an evolutionary explanation is an attempt to describe, or account for, a system that is capable of reproducing itself, a system that is capable of self-replication. Typical systems of this kind are organic but we can also envisage evolutionary explanations for economic systems, or systems of software that can replicate themselves. In this general sense, an evolutionary explanation is possible if the system has some special features. It needs to have at least one characteristic that is *hereditary*, a characteristic that does not disappear when the system replicates itself or passes from one generation to another. Moreover, this characteristic needs to show some *random mutation* from time to time and it needs to be crucial for the *survival* of the system as a whole. Once these three elements are present within a self-replicating system, natural selection occurs in the course of time. This very general description of an evolutionary explanation will be immediately recognizable as Charles Darwin's classical proposal once we use «organism» instead of the more general term «system» and once we use the biological term «trait» instead of «characteristic». It helps to recall that the expression «natural selection» can be some-

[3] For a useful classification of types of research in this area, see: J.L. Barrett, «Is the spell really broken? Bio-psychological explanations of religion and theistic belief», *Theology and Science* 5:1 (2007) 57-72, DOI: 10.1080/14746700601159564.

what misleading because it seems to suggest that nature is somehow capable of selecting just as human beings can deliberate and select one object rather than another. Such a suggestion however is definitely not part of the theory. The theory proposes to explain changes without having recourse to any deliberation. A better expression for natural selection would be environmental filtering. Organisms whose characteristics change in one particular direction may find themselves hindered in their reproduction, while others, with other changes in their characteristics, find themselves helped. The environment blocks some changes while it lets others proceed. Of course, for any given organism, there may be many traits that satisfy the triple condition for such a process to occur. In fact, natural selection can occur simultaneously at various fronts as regards the same species.

How can this kind of explanation be extended to account for religion? Charles Darwin himself started to extend evolutionary explanation beyond the confines of biology and this extension continued by others after him with varying degrees of success. Current interest in extending evolutionary explanation beyond biology is very strong but I will focus only on its extension into the area of religion[4]. In line with the general logical structure mentioned above, for religion to fall within the range of this kind of explanation, it must have some feature that satisfies the triple condition. Hence, evolutionary psychologists interested in religion must first locate an aspect, or a feature of religion that can generate an evolutionary explanation. If there is such a feature, an explanation will be available whereby the presence of this aspect could be seen as the product of natural selection. This method of inquiry within the philosophy of religion has given rise to many interesting studies. These may be classified into three broad camps. In one group, we find scholars who deny that there is any aspect of religion that is evolutionarily relevant. For these people, all aspects of religion are neutral. Religion confers neither advantages nor disadvantages for the survival of the organism. In another group, we have researchers arguing that there are indeed some aspects of religion that are adaptive. Their claim is that some aspects of religion confer a survival advantage on the organisms that have it. In another group, we have those who argue that religion confers serious disadvantages for survival, but that these disadvantages are counterbalanced by other traits. Let us now consider the arguments of each group in turn.

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[4] Typical recent studies include P. Boyer, *Religion explained. The evolutionary origins of religious thought*, New York 2001; S. Atran, *In gods we trust: the evolutionary landscape of religion*, Oxford 2002; A. Plantinga, «Evolutionary argument against naturalism», in J. Beilby, ed., *Naturalism defeated?*, Ithaca, NY 2002, 1-12; D.S. Wilson, *Darwin's Cathedral: Evolution, Religion, and the Nature of Society*, Chicago 2003; J. Schloss – M.J. Murray, ed., *The Believing Primate*, Oxford 2009. Major precedents include Charles Darwin himself in *The descent of man and selection in relation to sex*, New York 1874[2].

II. Religion as non-adaptive

Philosophers who argue that religion is not adaptive hold that it offers no survival advantage whatsoever[5]. No features or aspects of the phenomenon of religion can be relevant for an evolutionary explanation. Religion is an epiphenomenon, a by-product that in itself has no adaptive value but is carried along, in the course of evolutionary history, together with some traits that do have adaptive value[6]. To explain epiphenomenal characteristics of living things, biologists often use the term «spandrel». This is an architectural term referring to a particular part of the overall structure of a building, a part that is in fact useless. Spaces or sculptures between beams and supporting arches are often spandrels in this sense. Biologists use this term analogously to indicate features of a living thing that are not relevant for survival and cannot therefore be explained by an evolutionary explanation. An example of a biological spandrel is the sound of heartbeat. What is evolutionarily relevant as regards the heart is the way it pumps blood efficiently, not the sound it makes. Hence, the production of sound gets a free ride, as it were, all along the evolutionary development of the heart. The sound of heartbeat is not filtered off because, as regards natural selection, it is invisible. In the same way, religion, according to this view, is a free rider. It is a phenomenon that exists simply because it «rides» on other human features that confer survival advantages. Religion itself however remains irrelevant from the point of view of natural selection.

There may be some truth in this proposal but at least two weak points need to be highlighted. First, the proposal seems to suggest that what is not relevant for survival in the biological sense, what is not explainable via an evolutionary explanation, is not important in any sense. This cannot be correct. What is not explainable today may indeed become explainable tomorrow, when we have more empirical evidence. This holds for the sound of heartbeat; it holds for other physical characterises of organisms that are classified as epiphenomenal today, and it holds also for religion. We judge whether a phenomenon is epiphenomenal or not always with respect to current information about the biological world. The second weakness of this position lies in the way it seems to remain blind to the specificity of

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[5] A very clear case is made in P. Boyer, *Religion explained* (cf. nt. 4). See also J.M. Bering, «Religious Concepts are Probably Epiphenomena: a reply to Pyysiäinen, Boyer, and Barrett», *Journal of Cognition and Culture* 3.3 (2003) 244-254.

[6] The term epiphenomenon has various uses. In general, it refers to an effect that arises as a by-product rather than as the main result of a causal process. In philosophy of mind, mental events are called epiphenomena by those who hold that mental activity is a causally irrelevant by-product of physical causation in the brain. In this paper, I use the term as it is used in biology.

Homo sapiens as a rational animal[7]. Surely not all aspects of rationality are associated with survival. Think of Beethoven's composing of the Ninth Symphony and Michelangelo's painting of the Sistine Chapel. Were these relevant for survival in the biological sense? They represent eminently human endeavours but are distinct from human survival as such. They are not outcomes of simple instrumental reasoning, or of concrete survival strategies. It is therefore very plausible to hold that what happens at the higher levels of culture lies beyond the explanatory reach of evolution by natural selection. These higher levels are not biological as such. In this sense, we may indeed call them epiphenomena. To assume however that, since they are not within the range of evolutionary explanation, they are therefore less important would be to misread seriously the human phenomenon. What is specific of Homo sapiens is precisely this kind of intellectual dimension, which includes culture, art, and religion as well. What is epiphenomenal as regards biology constitutes the most important defining characteristic. The correct way of reasoning in this context therefore is to hold that the idea of an epiphenomenon could be useful as regards the physical aspect of Homo sapiens but would be inadequate if applied to the intellectual aspect. These observations have obliged some philosophers of biology to accept the intellectual dimension of Homo sapiens, which includes religion, as the specificity of this organism and to account for this as follows. They propose that the appearance of Homo sapiens in the course of the evolutionary history of the planet represents a crucial junction. It represents the point where evolution gave birth to a system that is no longer within its range, a system that floats freely[8]. It develops and evolves according to other criteria.

The overall cogency of the arguments in favour of the idea that religion is non-adaptive remains therefore unclear. On the one hand, the religious dimension of human living lies at the higher cultural level involving symbolic meaning, artistic expression, existential longing, moral concern and other such abstract areas of rationality. It is plausible therefore to consider it detached from what is purely biological. On the other hand, the human subject is undeniably biological, governed by the laws of adaptation. Assuming a clear dualism may be attractive to some, but it seems to be an evasion of the real question.

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[7] If the recently discovered *Homo sapiens idaltu* (1997) were a genuine subspecies of the genus *Homo*, then we would identify current humans as the subspecies *Homo sapiens sapiens*. For this paper, I do not need to take sides on this contested issue and will therefore use the expression *Homo sapiens* throughout.

[8] I borrow this expression from E. Sober, *Philosophy of Biology*, Oxford 1993, 215: «Natural selection has given birth to a selection process that has floated free.»

III. Religion as adaptive

We consider now the other possibility, namely religion as adaptive. This is by far the more interesting position. It attempts to examine how the religious dimension of humanity, even though abstract, moral and symbolic, is rooted in what is biological and is somehow governed by the same rules. The basic motivation in this line of research is that the way we explain the biological can be relevant for the understanding of the higher cultural characteristics of Homo sapiens, at least as regards some aspects. The first challenge is to find an aspect of religion that is hereditary, mutable and crucial for survival. As mentioned above, if we find such a trait, we would be in a position to explain religion, at least as regards this one aspect. We would be able to explain religion as the result of natural selection. The literature in this area of research is extensive but two main proposals stand out, one dealing with the human propensity to detect agency, the other dealing with the human capacity to collaborate in spite of the possibility of cheating.

To understand the first proposal, the best way to start is to recall some work in child psychology. Child psychologists have discovered that, when small infants see moving dots or moving pictures on a screen, they readily attribute agency to them. Small infants often attribute purpose to movement. They are, in a sense, over-generous with the attribution of intentional states. Many researchers take this observation to indicate that all humans have this intrinsic mental procedure or faculty that is constitutive of human nature. They are convinced that that all human infants start with a tendency to exaggerate when it comes to attributing purpose and agency. As children grow older, they then start checking this exaggeration. They eventually limit the attribution of agency to other humans and to some animals. To refer to this mental procedure, cognitive scientists use the expression «hypersensitive agency detection device», HADD for short[9]. This a psychological feature, a disposition of a specific type. Ancestors of Homo sapiens who had this feature showed an exaggerated tendency to believe in the existence of agents in the natural environment in which they flourished. Such hominids were thus wary of various circumstances – wary of circumstances that were genuinely dangerous and wary also of circumstances that were not. This cognitive feature delivers many false positives. However, it definitely represents the safer strategy. In general, it is better to err on the side of being cautious than on the side of being careless. The capacity to detect dangerous agents is certainly important for survival. It is also hereditary and randomly mutable from one generation to the next. We have therefore all the

[9] E.g. S. Atran, *In gods we trust* (cf. nt. 4); J. Barrett, *Why would anyone believe in God?* Walnut Creek, CA 2004; I. Pyysiäinen, *Supernatural agents: why we believe in souls, gods and buddhas*, Oxford 2009.

ingredients for natural selection. HADD represents an exaggerated form of agency-attribution. Since natural selection is possible in this context, cognitive psychologists of religion propose that, in our evolutionary past, hominids that were characterized by HADD had a survival advantage. Moreover, these cognitive psychologists associate HADD with the belief in animistic powers within nature and with the belief in God. For them, religion is essentially constituted by this disposition. It is an extrapolation of HADD. Humans have religious beliefs because they have been naturally selected according to HADD. Those of our ancestors with religion survived. Those without it were filtered off.

The second possible evolutionary explanation of religion has to do with successful human collaboration in spite of the possibility of cheating. Philosophical work in this area builds upon some important achievements in the area of evolutionary ethics, concerning cooperation within groups. If natural selection depends on the survival of the individual, how can we explain cooperation? Apparently, we need to consider groups themselves as units of selection. Research has shown that, if a group shows two particular characteristics, namely kin-selection (nepotism) and reciprocity (tit-for-tat), then natural selection favours groups of individuals that cooperate among themselves. This explanation is convincing. Biologists have used it to explain the behaviour of various social animals, like ants and bees. It is however vulnerable because of one serious problem. A cooperative group remains vulnerable to cheaters, sometimes called free riders: those who receive benefits from the group without contributing. This causes instability and it undermines the survival value of cooperation. Being a cheater, of course, needs the capacity to deceive, and this capacity varies depending on the intelligence of the organisms under consideration. For early humans, therefore, cooperation should have disappeared early on, undermined by their increasing intellectual abilities and the consequent ever more effective cheating. The fact that cooperation did not disappear shows that there must be something else in the story. Some special human feature must have been there to trump the effect of cheaters. And this is precisely the element that interests us here. The amazingly high degree of cooperation among humans shows that there is some pressure that acts against cheating. What could block humans from cheating? The proposal is that some early hominid groups shared a common belief in the existence of a super-human, omniscient judge. This belief ensured that individuals behaved well because they believed that, even when no colleague is aware of cheating or selfishness, punishment would still be delivered. They believed that superhuman forces observed and judged everything that individuals do within the group. This special belief made cooperation possible and ensured a survival advantage to the groups that had it[10].

[10] In this section, I draw from D. Johnson – J. Bering, «Hand of God, Mind of Man: punishment and cognition in the evolution of cooperation», in J. Schloss – M.J. Murray, ed., *The*

Cognitive scientists of religion use this kind of explanation to account for the origin of religion. They claim that the human religious dimension is a development of this primordial condition for cooperation. Religion is an enhanced version of the innate primordial belief in the existence of an omniscient judge, or of a number of omniscient judges, who can ensure justice in all cases, even after death.

We have therefore two possible evolutionary explanations of religion. Some philosophers have used these explanations to discredit religion in general. They argue that religion is unacceptable because its central beliefs are not caused by the entities that these beliefs include or talk about; these beliefs arise from mechanisms that function independently from these entities. According to these philosophers, religion is a useful fiction. This proposal is different from the Platonic idea of a noble lie, allegedly propagated intentionally by an elite who want to conserve their power[11]. For evolutionary psychology, the causes at work are purely natural and have effects irrespective of political deliberation or deceptive psychological strategies. Evolution generates religious beliefs without any causal link between, say, God and the belief that God exists. The cause of the belief is not God but something else, something natural. This is the essence of the argument here.

This kind of naturalistic anti-religious reasoning is not completely new. We find the same pattern for instance in Emile Durkheim's and Sigmund Freud's sociological and psychoanalytic theories of religion[12]. Both of them propose a natural explanation that allegedly discredits religion. For Durkheim, religion survives because its existence is correlated with that of society itself. Society depends on religion for its survival and regeneration. In his book *Elementary Forms of Religious Life*, he claims that «the effect of the cult really is to recreate periodically a moral being upon which we depend as it depends on us. Now this being does exist: it is society»[13]. For Freud, the explanation of religion lies in the psychoanalytic nature of human beings and in their basic social unit, the family[14]. His main explanatory tool here is the idea of neurosis, understood as a

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Believing Primate (cf. nt. 4), 26-43. The argument is not that this evolutionarily-relevant aspect is the only feature that ensures cooperation. There may be other factors that block cheating or enhance cooperation. The argument, however, does say that the idea of a super-knowing judge is the major relevant feature. See also I. Pyysiäinen, *How religion works: towards a new cognitive science of religion*, Leiden – Boston 2003.

[11] Plato, *Republic*, Book 3, 414e–15c.

[12] See for instance, J.S. Preus, *Explaining Religion: criticism and theory from Bodin to Freud*, New Haven, CT 1987, especially chapters 8 and 9.

[13] E. Durkheim, *Elementary Forms of Religious Life*, trans. J. W. Swain, New York 1965, 389.

[14] Freud presents these ideas mainly in *Totem and Taboo* (*Totem und Tabu: Einige Übereinstimmungen im Seelenleben der Wilden und der Neurotiker*, 1913); *The Future of an Illusion*

universal human predicament. Religious phenomena are the effects of a causal chain originating from a specific kind of psychological dynamic. For Freud, human evolution has an important role in this process because the individual recapitulates the history of the species. Our current cognitive patterns and dispositions show traces of the original traumatic experiences whose effects have been hammered into the human psyche since the dawn of the species[15]. In *Totem and Taboo*, he creates a story about the disgruntled sons who overcome, and eventually devour, their father because of the ambivalent relation they have with him, he being lovable but at the same time possessor of all the women. Freud offers this narrative as the cause of all religious beliefs and practices. Religion is the fulfilment of the need for adjustment when living the ambiguous relation with the powerful, attractive and yet repressive father[16].

We see here therefore how the evolutionary critique of religion is just one of the various possible naturalistic arguments that try to discredit religious belief. These arguments function by identifying the alleged natural cause of religious belief: evolutionary, social or psychological. They obtain their force from the assumption that the cause of a belief throws light on whether that belief is true or false. Let me now explore three possible ways of responding to such an objection. What I propose will be applicable to any objection that is based on the natural genesis of religious belief.

First, we need to examine the structure of the argument carefully. Is the logic correct? The objection seems to suffer because it involves the *ad hoc* fallacy. It proposes what philosophers sometimes called a «just-so» story – a historical conjecture, a narrative, in which the present state of affairs emerges as a conclusion. The story however remains, to some extent, unverifiable. This *ad hoc* element is clearly evident in Freud's story of the disgruntled sons. He

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(*Die Zukunft einer Illusion*, 1927); *Moses and Monotheism* (*Der Mann Moses und die monotheistische Religion*, 1939).

[15] Freud endorsed Ernst Haeckel's doctrine that the development of the embryo, from fertilization to birth or hatching, goes through phases that correspond to successive stages in the evolution of the animal's distant ancestors. Haeckel's hypothesis was that «ontogeny recapitulates phylogeny». This hypothesis, known as the recapitulation theory, is nowadays untenable, at least in its strong sense, but it was dominant and widely accepted in Freud's time. For Freud, mental recapitulation mirrored the physical one. He postulated that neuroses like phobias could have their origin in traumatic experiences not only in the patient's past but also in the past of the human species as a whole.

[16] This account of religion in *Totem and Taboo* is not Freud's only account. It is distinct from the one he develops in *The Future of an Illusion*, where religion is the fulfilment of the wish to have a protective father in the face of the harsh realities of life that make us feel weak and helpless. Just as we needed a father during our childhood, so also we need religion for our adulthood. Current psychologists and psychoanalysts tend to consider this latter account much more acceptable than the one in *Totem and Taboo*.

apparently engages in a relatively free construction within the broad contours of his overall project of making religion the result of a neurosis[17]. In the case of the evolutionary explanation, the *ad-hoc* element, although less evident, is present as well. The proponents of an evolutionary explanation create a story within the broad contours of evolutionary biology and then present it as the cause of current religious belief and practice. Of course, there may be other causal explanations for current religious belief and practice. Even within the limited domain of evolutionary explanation, there may be competing causal explanations, competing stories. The overall effect therefore of such an anti-religion argument is not that it falsifies religious belief. It is rather that religious believers who are interested in knowing something about the causes of their beliefs have now more possible explanations available. They will have to evaluate each one and determine which one is best. We can understand this point better with the aid of an analogy. Peter believes he sees a faint cloud in the sky. He trusts his vision because it has served him well all his life. His friend however explains to him how, if there were a smudge on his glasses, it would cause him to believe that there is a cloud in the sky. What should Peter conclude? Is he obliged to abandon his belief that there is a cloud in the sky simply because a new explanation says that he could be mistaken? The answer is no. There is no obligation. What we can safely say is that Peter has now more than one explanation available. His belief could have been caused by the cloud itself or it could have been caused by something else, in which case his belief would be false. He has to judge which explanation is better. There is no definite falsification within such a procedure. A «just-so» story is not a knockdown argument.

As a second way of responding to the evolutionary argument against religious belief, we can explore the analogy of vision a bit further. Religious believers can press the point that, if we assume that religious beliefs are the result of natural selection, we are saying that such beliefs confer an advantage on those who have them. Consider vision as an example. Vision confers evolutionary advantages on those who have it. It is not just the internal sensation of seeing that confers these advantages. It must be truthful vision. Mutations that result in organisms that see things where there are no things to be seen are dead ends. Such organisms are filtered off. Hence, vision's adaptive attribute is related to the realism involved in seeing. We can extend this example to understand the faculty of reason. Correct reasoning confers evolutionary advantages because inferring and deducing correctly makes good reasoners survive where confused reasoners die off. It should

[17] Freud's idea of neurosis is complex and does not correspond exactly to what the word conveys today. For him, it is possible to claim both that religion arose as the result of a kind of neurosis and that this development was a normal step in the advancement of humankind.

be evident therefore that, once we assume at the start that having religious beliefs is adaptive, we are committed to some kind of efficiency with respect to these beliefs. True beliefs help enormously for survival. On the contrary, false beliefs make survival problematic. We should expect therefore that, over considerably long periods, false beliefs would disappear and true beliefs would remain because they prove their worth. If kidneys and hearts are effective in their domains, it is very plausible to hold that vision and intelligence are also. And, if religion is a special expression of affective and intelligent engagement with the world, then religion can be considered acceptable on these grounds. In other words, if belief in God is useful, than there is some truth in it.

This kind of response, based on the realism inherent within the very idea of survival, is very plausible. Nevertheless, it may not be convincing to everyone. Some may feel that it draws too close an association between believing in God and believing in the existence of material things. Believing in God is certainly not the same as having beliefs about material things. These two kinds of belief may be similar but they are certainly not the same. In line with this point therefore, we can launch a third possible response on the part of religious believers. Defenders of religion may argue that evolutionary explanations, for example in terms of HADD or in terms of an all-knowing judge, are indeed acceptable. They may be a distant cause of religious beliefs and practices, but they are just one of the many causal factors involved. They may have indeed been operative at the dawn of intelligence within early hominids. These causal evolutionary explanations therefore could well correspond to what humans may have used as a first stepping-stone in their inquiry regarding global meaning and coherence. On this view, evolutionary explanations can supply us with some explanation but not with a full explanation. They can supply us with some element of our experience at the level of concrete material existence. From these, via a process of abstraction, we can derive knowledge of a higher order, knowledge of abstract objects, somewhat like what we do in mathematics. Mathematical knowledge is distinct from empirical knowledge but concrete experience can help. It can suggest mathematical relations. We can say something similar are regards religious knowledge. Religious beliefs deal with the abstract level. Our knowledge of the abstract realm can indeed start with our experience at the concrete level, with our experience of objects and situations. This experience can serve as an intimation for the abstract level. We have here therefore a third possible response to the evolutionary criticism of religion. We can admit that there is indeed some truth conveyed by the evolutionary explanation but we refuse to limit religion to the content of this explanation. In other words, this response opposes those who claim that religion is nothing more than what evolutionary psychologists propose.

In the preceding paragraphs, I have proposed three possible responses available to the religious believer who wants to block the typical anti-religion argument associated with evolutionary explanation. The last one seems to expose a general problem in this area: the problem of conceptual reductionism. Cognitive scientists often tend to reduce a very complex phenomenon to one simple element. They then supply an evolutionary explanation for this one element and declare that they have explained the entire complex phenomenon. This kind of reduction, especially when concerning religion, cannot be a correct way of inquiry. When scientists concentrate only on what is measurable, they can miss other aspects that can be more important than what is measurable. Consider for instance the meaning of human love. It would be very strange to hold that the real meaning of human love is the action of hormones in the body. It is true that the action of these chemicals is important, especially as a kind of communication between different organs within the human body. It is true that hormones are especially active when people love one another. The meaning of love however is much more than the action of hormones. The empirical discovery regarding hormones represents an achievement, but this empirical truth does not exhaust all the reality of love. The depth of meaning associated with love remains to a very great extent completely unaffected by these empirical discoveries, important as they are. When love is described as real, nothing is being said about the chemicals involved in that experience. What is being said is situated at another level. The scientific discovery changes the broad concept and experience of love only at one tiny spot, if it does at all. The case of religion is similar. Suppose that evolutionary psychology has established for everyone's satisfaction that religion is definitely the result of HADD. Should this claim oblige us to reduce the concept of religion to HADD? Should we say that we have now discovered what religion *really* is? The answer is no. We may have discovered an important part of the origin of our knowledge of God. We may have discovered one important stage within the process whereby humans struggled to acquire more and more knowledge about the hidden movements of nature, about the original causes of these movements, and then ultimately about God, as the origin and sustainer of all. The way I am expressing my position here assumes, of course, that God, in Himself, is in no way dependent on what humans know about Him or on whether they know about Him at all. Those who insist that God is nothing more than a projection of human aspirations and longings in some form or other, will not accept this assumption. To the extent that their not accepting this assumption defines their research program, the dialogue is bound to stall at this fundamental point. Religious believers cannot aspire to oblige their opponents, through reason and arguments, to accept the religious outlook, ignoring the essential freedom inherent within religious faith. They can however show, as I have tried to do here, that approving the scientific value of evolutionary explanations of some part of

the religious phenomenon does not oblige us to adopt a reductionist approach. The traditional tenets of organized religion in the Judeo-Christian tradition are indeed compatible with some evolutionary explanations[18].

The upshot of this section therefore is that if religion is adaptive and if the evolutionary explanations proposed are acceptable, there is no obvious contradiction with the central claims of religion. Religious belief includes various dispositions that the person acquires over time. Such dispositions, of course, can be of the individual person, or of the particular group or of the tradition that the person belongs to, or even of the entire species as a whole. Some of these dispositions, in their primordial form, may indeed be well explained via evolution. It is certainly plausible to argue that HADD explains to some extent the disposition to believe in the existence of a cause of the universe. There is no obvious conceptual problem here. We can say the same thing as regards the evolutionary explanation involving the belief in a super-knowing judge. It is plausible to argue that such a belief in a super-knowing judge is the result of natural selection and is, to some extent, responsible for a disposition to believe in the afterlife and in the last judgment. There is nothing intrinsically contradictory in making this claim, as long as we do not add the reductive clause that religion is just this disposition and nothing else.

IV. Religion as mal-adaptive

Can religion be seriously disadvantageous for the individual? The main idea here is that we can compare religion to a virus or a parasite. Just as we have parasites or viruses that use the host animal for their survival, often debilitating or even killing their host, so also we can have ideas that use the human mind for their survival. Daniel Dennett for instance compares religious people to ants infected by a minute parasitic flatworm called a lancet fluke. This parasite makes the ant behave irregularly, climbing blades of grass incessantly with no apparent reason. Cows that eat the grass will assimilate the ant and this allows the parasite to complete its reproductive cycle by passing through the cow's

[18] In this context, we need to recall moreover that the term religion is vague in the logical sense. It has no clear boundaries. What we call religions share indeed similarities between them but there is no guarantee that a core of features is shared by all. It is very probable that there is no such common core. The more data we get from cultural anthropology, the more the idea of a common essence of religion becomes unlikely. The concept of religion is like the Wittgensteinian concept of game, or even worse – worse because some religions involve a very high degree of self-reflection and self-adjustment, which implies an ongoing transformation of their very nature. It is possible to argue that we gain precision in this kind of inquiry if we consider faith instead of religion. See L. Caruana, «Is Religion undermined by Evolutionary Arguments?», *European Journal for the Philosophy of Religion* 2 (2010) 85-106.

gut. Dennett suggests that we can account for religion in the same way. An idea can make an individual behave irregularly. It can make the individual, for instance, engage in self-harm. The idea affects individuals in this way in view of its own project of spreading more extensively, in view of becoming embedded in other minds. Dennett and other researchers in this area often use the word «meme» to refer to such an idea. A meme is a cultural unit that can be transmitted from mind to mind, a unit that normally consist of some mutually related ideas, symbols or practices. It is the cultural analogue of the unit of biological heredity, the gene. Religion is a typical meme[19].

To understand and critically evaluate the main point of this critique, we need to make at least two important clarifications. Philosophers who describe genes, viruses or memes as wanting to use a human being for their own advantage seem to be attributing intentionality to these entities. Such an attribution seems completely misplaced and any anti-religion argument resulting from such explanations would therefore be unfounded. These philosophers however are often aware of this danger. They concede that, although we are inclined to describe genes, viruses and memes as having intentions and desires, we should recall that this way of describing nature is just a result of our limited vocabulary. Our language is an extension of our everyday life and is therefore highly intentional. Their proposal therefore is that the finality evident in processes involving genes, viruses and memes is purely natural, the result of natural selection. There is no misplaced anthropomorphism. The second clarification has to do with the resilience of religion. As the history of the twentieth century shows, highly organized and extensive campaigns to eradicate religion have failed. There is something in religion that makes it re-emerge. So, even if religion were really mal-adaptive and detrimental to the individual, we need to assume that there is some other force to counterbalance its negative effect. Otherwise, religion would have disappeared thousands of years ago. Of course, philosophers who describe religion as a harmful meme, or as a kind of mental disease, often see themselves as the cure. They see themselves as the essential factor that liberate humanity from the evil effects of religion. The situation however cannot be that simple. If we consider the religious dimension of humanity as a natural phenomenon, we should consider the anti-religious movement as a natural phenomenon also. This follows from the fact that religion and anti-religion have coexisted since the dawn of history. Current atheists seldom realize that they constitute just one other voice in a long tradition that is as old as religion itself. If we limit ourselves to evolutionary explanation, whatever has survived the long stretch of evolutionary history must have survival value. We cannot therefore say that, since we have an evolutionary explanation of the biological basis of religion, therefore religion is discredited. If we were to say

[19] D.C. Dennett, *Breaking the spell: religion as a natural phenomenon*, New York 2006.

that, we would be obliged to discredit anti-religion in the same way. We would be obliged to discredit even science itself in the same way. If discrediting were the major aim of evolutionary explanation, the entire method of evolutionary reasoning beyond biology, at least in this context, would need careful reconsideration. Otherwise, it would undermine itself[20].

Conclusion

The line of argument in this paper dealt with three positions. It focused on those who argue that religion as completely distinct from biology, those who argue that religion is adaptive and those who claim that religion is mal-adaptive. To what extent are such evolutionary explanations of religion plausible? Those who say that religion is epiphenomenal limit their visual field to what is biological and therefore run the risk of neglecting the most important dimension of Homo sapiens, namely rationality. Those who claim that religion is adaptive can indeed help us understand possible original natural dispositions that may have predisposed hominids to seek higher levels of understanding. They need to recall however that the phenomenon of religion is complex. To understand it, we need to resort to both causes and reasons, which are both involved in the way humans assent to what they believe. People sometimes feel caused, or mechanically constrained, to believe something and then they decide to accept that belief, making it their own by acting upon it. In such cases, they willingly accept what they feel inclined to believe. To the extent that the reasoning I presented in the second section of this paper is correct, genuine religious belief in its present form operates therefore like this. It is the deliberate acceptance of what the believer is naturally inclined to believe. In the final section of the paper, I then considered those who claim that religion is mal-adaptive. I argued that they face the problem of how to explain religion's resilience against all odds. This point might make religious believers want to welcome evolutionary explanation. They might want to argue that,

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[20] Charles Darwin himself recognized that evolutionary explanation could apparently undermine itself. In one of his letters, he expresses concern about the apparent implication that even his own mind, which is discovering the laws of evolution, is itself the result of evolution. «But then arises the doubt, can the mind of man, which has, as I fully believe, been developed from a mind as low as that possessed by the lowest animals, be trusted when it draws such grand conclusions [regarding the ultimate cause of all things]? I cannot pretend to throw the least light on such abstruse problems. The mystery of the beginning of all things is insoluble by us; and I for one must be content to remain Agnostic.» Quoted by Darwin's son, Francis, in a biography of 1876. See F. Darwin (ed.), *The life and letters of Charles Darwin, including an autobiographical chapter*, London 1887, Vol. 1, chapter VIII, 313; available online: http://darwin-online.org.uk/

since religions have survived the long sweep of evolutionary time, religious claims must be true. This move however would neglect the fact that both religion and anti-religion have survived the long sweep of evolutionary time. The struggle itself between religion and anti-religion is apparently part of human nature. This does not mean however that a complacent attitude is preferable. There have definitely been social practices, often with religious connotation or justification, which definitely needed correction or elimination. Think of child-sacrifice, witch-hunting, Chinese-style foot-binding, genital mutilation, and others. For progress, correct and honest reasoning is indispensable. Whether we accept evolutionary explanations of religion or not, we need to uphold ongoing self-evaluative and self-corrective processes within religious communities. This remains the best policy[21].

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ABSTRACT

This paper critically examines three positions in the area of the evolutionary psychology of religion: the one according to which religion is completely beyond the reach of any evolutionary explanation, the one according to which religion is adaptive in the evolutionary sense, and the one according to which religion is mal-adaptive, in the sense that it confers no survival advantages but rather disadvantages. The result of the critical evaluation of these positions indicate that the embodied rationality of *Homo sapiens* renders evolutionary explanations applicable and important but only to some extent. Genuine religious belief involves a dimension that is material, and therefore evolutionarily explainable, and a dimension that is not, namely the believer's act of deliberately accepting or not accepting what he or she is naturally inclined to believe.

Keywords: belief, Darwin, evolution, psychology, religion

RIASSUNTO

L'articolo esamina criticamente tre posizioni nell'ambito della psicologia evolutiva della religione: la posizione secondo la quale la religione sia al di là del raggio di qualsiasi spiegazione evolutiva, la posizione secondo la quale la religione sia adattiva nel

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senso evolutivo, e la posizione secondo la quale la religione sia mal-adattiva nel senso che non conferisca nessun vantaggio di sopravvivenza ma piuttosto degli svantaggi. Il risultato della valutazione critica di queste posizione indica che la razionalità incarnata di *Homo sapiens* rende le spiegazioni evolutive applicabili e importanti ma soltanto parzialmente. La credenza religiosa genuina coinvolge una dimensione materiale, e dunque spiegabile in termini della psicologia evolutiva; coinvolge anche una dimensione che non è materiale, cioè l'atto da parte del credente di deliberatamente accettare o non accettare ciò che lui è naturalmente propenso a credere.

Parole chiave: credenza, Darwin, evoluzione, psicologia, religione