
IS IT THROUGH EVOLUTION, ON A PROCESS OF CHANGE THAT WE TRANSFORM OURSELVES AND BECOME MORE LIKE A LOVING, NON-VIOLENT GOD?

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Abstract

Many classical theodicy questions remain unanswered, one of which is: if God has created humans, why are we so violent? On the other hand, anthropologists and geneticists have their own questions about human violence, including: is modern man/woman more or less violent than the earliest *Homo sapiens*? Considering that the genus *Pan* and *Homo* are phylogenetically sister clades, is homicidal behaviour (conspecific lethal violence) in *Homo sapiens* the result of our genetic kinship? And, do sociocultural evolutionary processes modulate human violence? I put forth a model of integral evolution to address the theological theodicy problems in the light of evolutionary knowledge. I examine how the genetic component of spirituality/religiosity, subject to natural selection, as well as the cultural (environmental) component of spirituality/religiosity (such as doctrine and religious practices) may contribute to the reduction of lethal social violence. This integral evolution would thereby bring humanity 'closer' to being 'the image of a loving God' through a continuous unfinished evolutionary process (evolution towards self-transcendence). This model shows how this behavioural trait (human violence) is subject to natural selection, modulated by cognitive evolution and the sociocultural environment, including spirituality/religiosity as a component of this gene-environmental modulation.

Keywords: theosis, conspecific, biological, social, cognitive-cultural

1. Introduction

The violence that human beings can inflict on their fellow humans (conspecific lethal violence, to use anthropological terminology) has been the object of reflection from different perspectives. Undoubtedly, the more complex a question is, the more multidisciplinary input is required to find creative answers. Frequently, theodesic (theological and philosophical) and scientific

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(anthropological and genetic) perspectives approach the question with different methodologies, which makes it difficult for knowledge to flow both ways to mutually enrich each other's perspective.

Theodicy is a discipline of Philosophy whose aim is to demonstrate rationally the existence of God by means of reasoning, as well as the description of his nature and attribute. From a theodesic viewpoint, God is often described as good, non-violent, compassionate, cooperative, just, and forgiving, among other attributes. Why then does humanity - which, according to some religious beliefs, has been 'created in God's image' - engage in violence, homicide, war, and other behaviours that seem antithetical to these qualities of God?

Throughout the history of theological and philosophical thought, there have been a variety of answers to our question, including the following:

- 1) Divine Determinism - that God intervenes in people to cause their sinful ways (e.g. "hardens their hearts" Deuteronomy 2.30), or predestines at least some people to sinful (ungodlike) behaviours (Calvin Theology, see [1, 2]).
- 2) Theological Libertarianism - that God has provided humanity with the cognitive freedom ('free will') to choose actions that are, or are not, in conformity with God's character [3, 4].
- 3) Individual Growth - that God has created conditions that permit evil (including human-caused evil) in order to provide the necessary conditions and opportunity for personal development, such as to find positive meaning and positive religious experience within suffering [5], to develop morality and compassion ('soul-making' Irenaeus (see [6, 7]), and to develop happiness (there is no happiness if suffering is not experienced, and there is no action of God needed in a "perfect world" [8]).
- 4) Others, rather than trying to answer the question directly, have instead sought to justify God's act (of creating humanity with the capacity for violence) through arguing that, despite all the suffering that exists, this world is "the best of all possible worlds" that God could have created to bring about moral goodness and personal growth [9].
- 5) From the Orthodox theosis and the Eastern Catholic Church, man seeks union with God, he is in the process of deification or divinization. According to Saint Irenaeus, the human being during this process throughout life would be called to the union of soul and body with God. Humans are not born in the image of God, but we are modelled in the likeness of Him, and we are the key point where God unites with all His Creation [10]. For Augustine, evil enters the world when man freely decides to disobey the 'divine order' and decides to be God for himself. Augustine has a negative vision of humanity that remains in a moral desert. Saint Irenaeus starts from the same basis but gives man the ability to develop himself through the virtues and to discover the Kingdom of God in this world. This moral development would eventually lead to theosis, to divinization with the approximation of all divine attributes (mercy, kindness, generosity, non-violence...) [11].

From an anthropological point of view, different possibilities have been proposed to explain the existence of human violence. Some argue that frequent violence is a relatively recent development - that in *H. sapiens*' early period war was rare, becoming common only when populations were settled, food was stored, agriculture was generated and urban centres came into existence. In contrast, other scholars, also interpreting ancient human remains, argue for a genetic (and therefore ancient) origin - that *H. sapiens* have always been capable of assaulting and killing our fellow human beings because of humanity's intimate genetic past with chimpanzees. This view correlates with the view that the development of sociocultural processes has modulated the human inclination to violence, thus the appearance of human settlement led to *decreased* levels of human violence [12, 13]. A third view is based on cognitive evolution - Kissel and Kim [14] and Hare [15] propose that social cooperative violence was made possible with the beginning of symbolic thinking and full cognition, in a parallel development that allowed sociability, conflict resolution, and peace-making.

How, then, might a theodesic perspective integrate a view of God as described earlier (good, non-violent, compassionate, cooperative, just and forgiving, among other attributes) with an anthropological perspective? For instance, can spirituality/religiosity, to the extent that these are sociocultural phenomena, contribute to the modulation process of the genetic-origins approach? Do any of these views diminish or strengthen the idea that humanity bears the image of God?

I propose, from a theistic evolutionary perspective, to apply an integral evolutionary model (integrating different evolutionary perspectives) to the social phenomenon of 'co-specific lethal violence in humans' (homicide). The aim is to address unresolved theological questions: Are we the image of God? If so, who are the image of God, the *H. sapiens* of 200,000 years ago or present-day humans? Is it through Evolution, on a path of continuous transformations, which we come to resemble a loving and non-violent God? I will approach these questions from interconnected evolutionary theories: biological evolution (natural selection), social evolution (social group selection), cognitive and cultural evolution. I will also look at the evolutionary phenomenon of transcendence, and thus introduce the concept of 'Evolution towards transcendence', a product of humanity's cognitive and socio-cultural evolution, to explain how, despite appearances, humans are less violent now, and have incorporated more 'Godlike characteristics' than exhibited 200,000 years ago. This model is my contribution to try to lessen the confrontation between theism and evolution in relation to homicidal human behaviour

I begin with a brief evolutionary account of human beings. Figure 1 shows an integral model of the evolution of human beings from primitive populations (phylogenetically related to apes) to anatomically modern man. The model is not intended to show a chronological and continuous description of the process but rather the relative importance of the engines of change throughout the evolutionary process. The model is a continuous one, where biological, social, cognitive, and cultural evolution and their interactions are the basis of evolution towards transcendence. This reflection fits in well with the holistic development

of the modern concept of continuous creation analysed by Schmitz-Moormann and Salmon [16] or Revol [17]. We shall therefore employ these four aspects of evolution to examine the development and trajectory of violence through human evolution, as well as its tendency to self-transcendence.

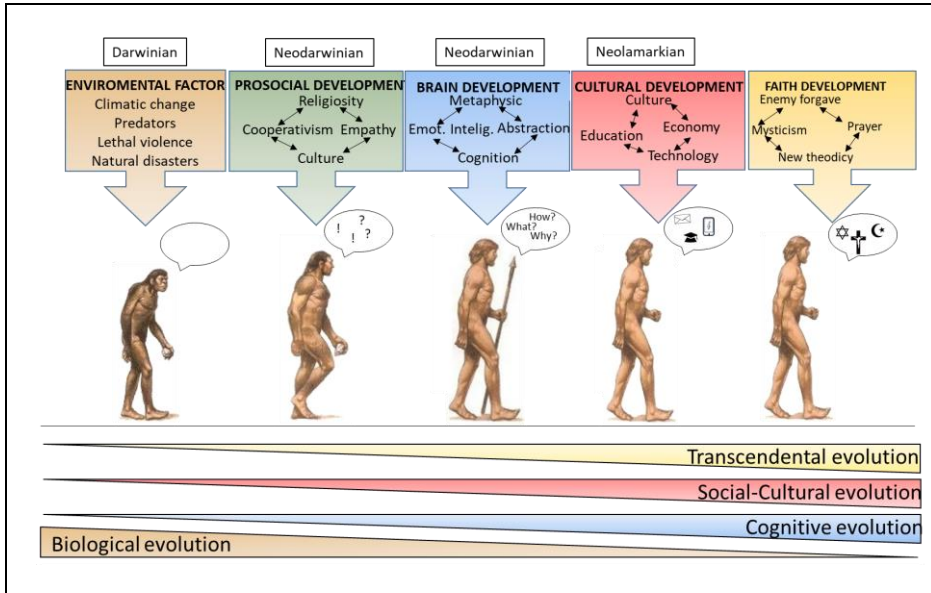


Figure 1. Comprehensive model of human evolution from primitive populations closely related to apes to anatomically modern man.

2. Biological evolution

The variation of a biological or psychological features (characters or traits) between individuals may be due to genetic, epigenetic and/or environmental factors. Heritability is the proportion of the variation in a character trait between individuals of a population attributable to genotypic variation. It indicates the extent to which genetic effects act in the manifestation of this trait in an individual. If a trait has high heritability, it can be subject to selection, while low heritability indicates that observed variation of character depends fundamentally on the environment. Though heritability is not a fixed value and depends on the populations, some examples can be illustrative: ‘fierceness’ in cattle can have a high heritability. Therefore, it is possible to select increasingly fierce cattle through generations and to predict to what extent subsequent generations will be fiercer. Similarly, interspecific lethal violence in human populations is an observable and measurable phenotypic trait and plesiomorphic, i.e. it appears several times over the course of mammalian evolution independently. It is a quantitative or polygenic trait because it is controlled by multiple genes and consequently its phenotypic expression is gradual, from extremely violent or extremely peaceful (less frequent) and where the average behaviour will be the most frequent. This trait has a high to

moderate heritability in a global sense and offers genetic variability such that it is subject to natural selection. Consequently, it is acknowledged that evolution has also shaped human violence (biological evolution) [18, 19].

Hominization (human evolution) began 7.5 million years ago, when the lineage that gave rise to the genus *Homo* diverged from the genus *Pan* (chimpanzees and bonobos). Thus, genetically, humans are sister groups to the great apes [20]. The fossil record shows that the genus *Homo* was composed of a diversity of species (or subspecies), but all lineages became extinct except *H. sapiens*, which originated 200,000 years ago [21]. Humanity's sister clade includes the *P. troglodyte* (chimpanzees), a lethally aggressive species, and *P. paniscus* (bonobos), a female-ruled society where part of the arguments is resolved by much less aggressive sexual behaviour. The shared genetic origins of *Homo* and *Pan*, as well as the high to moderate heritability of violence in general, allow us to hypothesise that humankind's violent social behaviour may have a phylogenetic basis. We do not rule out the influence of sexual strategy described in bonobos, but it is not the subject of study in this manuscript. Gómez et al. [22] collected data on more than 4 million deaths, quantifying the level of lethal violence in 1,024 species of mammals from 137 taxonomic families. This included about 600 human populations, ranging from 50,000 years ago to the present. Using phylogenetic comparative tools, the authors showed that the level of lethal violence was $2.3 \pm 0.1\%$ of all deaths in the clades related with the primate's origin and the proportion of phylogenetically predicted human deaths as caused by conspecific violence was $2.0 \pm 0.02\%$. This seems to indicate that a certain level of co-species lethal violence is due to the phylogenetic position in the mammalian tree. The degree of lethal violence during historical periods of warfare was higher than phylogenetic predictions and has decreased significantly in more advanced societies [22, 23]. These changes in the degree of violence, compared to what is expected phylogenetically, can be explained as an influence of selection against violent aggression, a process that can also be called self-domestication [15]. An example of this selection, that can be found in animals as well as in humans, is the cooperation between male chimpanzees of low fighting prowess to plan for eliminating the most aggressive and dominant alpha male [23]. This does not mean, in any way, that the violent behaviour of modern *H. sapiens* is morally justified by this evolutionary inference, or that our primate ancestors should be considered ruthless murderers. Studies on primate behaviour denote altruistic and prosocial behaviours [24]. It means that conspecific lethal violence estimated in early human populations conformed to what one would expect from a phylogenetically sister group to the apes, but such violence can become moderated over time due to selection factors such as cooperation.

2.1. Social evolution

Pinker's global statistical studies [25, 26] clearly show how since the mid-20th century war, genocide, homicide, aggression against women and children and sexual assaults have decreased. Social factors as the increase in population density or the development of states societies, where revenge or justice was

carried out by the state and not by the individual, significantly reduced lethal violence [22]. Religiosity, to which some biologists and sociologists attribute a medium-high heritability [27-29], can offer, depending on social pressures, adaptive advantages for individuals (evolutionary theory of religion). An example of this theory is the incorporation of the concept of ancestors, spirits and gods guarding the social circle and could become an effective strategy to reduce egoism and build more groups that are cooperative [30]. The divine mandates, moreover, have been the axis of the moral values that have sustained our societies (social evolution). Frost explains as state societies punished young men who acted violently [31]. He suggests the Roman State influenced by Christian ideas, decreased aggressive predisposition from the gene pool while favouring those processes related to peace and order. It has been proposed that religiosity has been, at least in some moments of Evolution, an adaptive advantage associated with cooperation and altruism [32]. Therefore, lethal violence has evolved modulated by prosocial factors such as religiosity [33-35], cooperation, altruism [33, 36] and their interactions [28, 37], in what we could call '*social evolution*' (Figure 1). Religiosity could be maintained in the population due to the sexual morality of many religions that strengthen fidelity and a high number of children. Also, parental responsibility behaviours could have increased the fitness (biological efficacy) of those individuals who practiced these religious behaviours, setting their genetic heritage in the population [38].

We need to consider, however, that the forces of change in social evolution vary from one type of social system to another. There is not a simple universal cause of social evolution. Thus, devotion to God can sometimes inspire irrational behaviour that results in terrorism and war [39, 40] while in other socio-political contexts it favours altruism and empathy [33-35]. Establishing the relative importance of social pressures and, in particular, of religions as engines of change is complex but this literature review seems to indicate their involvement in human domestication and in the reduction of intraspecies violence.

3. Cognitive evolution

Because of biological and social evolution, the brain size increases considerably in comparison with our ancestors the apes. This is the basis of cognitive evolution, thanks to which man acquires unique abilities in his development: complex language and thought, use of causal reasoning to make inferences related to the contingencies of the local environment, generation of culture and technology, emotional intelligence development, religious thought, rejection of death as the end and faith in eternity, etc. All these capabilities allow man to remove himself from natural selection, handling the selective phenomena by modifying his environment [41]. For the first time in evolution, a biological species is able to cancel natural selection consciously. Clear examples are the care of elderly individuals, sick or disabled. To carry out these caring actions,

complex and very expensive structure has been devised (hospitals, pharmaceutical industry, social services). Human new-borns, despite being poorly adapted to extreme situations, have a high survival rate thanks to this cognitive and social evolution and development of the culture of care. Electricity, transportation, information technology, allow us to occupy ecological niches unimaginable not so long ago.

According to the evolutionary theory of religion, many religious concepts require considerable cognitive and social resources to create, remember, and transmit them [42]. This cognitive development allows us to think more and better about God, generating a knowledge of God and its relationship to human beings. This understanding is born more from intentional curiosity and less from fear of punishment. From animist religions to polytheists and finally monotheists, cognitive thinking and scientific discoveries have freed us from myths and fetishes. Also helped us to interpret certain uncertainties about the attributes of God. For classical theodicy, it is 'scandalous' that the creatures of a God-Love are violent, however, evolutionary theories can show a God who works through secondary causes [43]. This knowledge is an added value that stimulates us to fulfil the good precepts in order to become more like Him, distancing us, for example, from violent actions.

4. Culture evolution

Some species of birds, mammals, etc., are able to modify their environment and generate selective pressures on the organisms they interact with. This is known as 'niche construction theory'. The effect of niche construction is especially important in situations where environmental alterations persist for several generations. In this way, ecological inheritance is added to genetic inheritance in the evolutionary process [44]. *H. sapiens* is capable of greatly altering its environment, bequeathing these modifications to future generations. These changes or alterations caused by human populations acquire the category not only of 'ecological changes' but also of 'cultural' changes. As a result of these changes, men and women have taken another step in biological and social evolution, what we call cultural evolution [45]. Cultural evolution explains how cultural traits stabilize, change and diffuse in populations, and why some cultural traits are more 'attractive', i.e. more likely to spread, than others. A cultural trait or variant is understood, in this context, as anything that is, at least to some extent, transmitted or socially motivated, including beliefs, knowledge, attitudes, norms, traditions and practices, behaviours, stories, material objects, etc. [46]. Cultural heritage is the material and intangible heritage of a community that has been bequeathed to be preserved and transmitted to the following generations. These acquired character traits are not inherited through genes, but through complex languages and education, between one generation and another. It is well known that the mechanisms of transmission of knowledge and social learning have played a key role in human evolution [47].

Violent behaviour is a cultural trait with an increasing scope because of technological development and computerized transmission of information. Through social networks, real violent images can cause behavioural health risks by reactivating or normalizing violent behaviours [48]. In this way, violence is 'inherited' or transmitted culturally. On the contrary, 'Mimesis', as a form of cultural transmission that teaches both pro-social and progressive norms, allows learning compassionate and giving behaviours [49]. Pally provides an interesting overview of cooperative evolution in the face of aggression [49].

Religion is also considered a cultural value. Through cultural evolution, religion has been transmitted or taught from one generation to the next. This inheritance takes place through regulated (schools, universities) or non-regulated education, in a social-family framework. In this cultural heritage, moral values defined as codes of behaviour establish what is right and what is wrong. These codes consider lethal conspecific violence as negative behaviour, at least in most societies, and are socially rejected and penalized.

5. Evolution towards transcendence

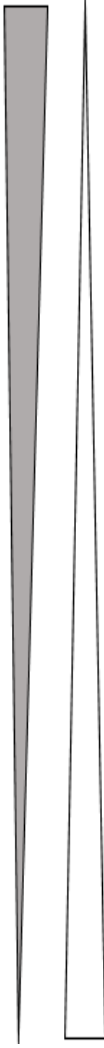
Despite the advancement of knowledge, the evolutionary processes that have given rise to the emergence and maintenance of religiosity and self-transcendence in societies are not fully known [50]. However, this does not mean at all that there is no evolutionary and neurological evidence that allows to know the organic nature of these attributes.

For some neuroscientists, spirituality/religiosity has been redefined as a component of wisdom (complex human feature made up of different components) localized primarily to the prefrontal cortex and limbic striatum [51]. Self-transcendence (as a part of spirituality/religiosity) is the capacity to reach out beyond oneself, approaching the divine nature and discover or make meaning of experience through broadened perspectives and behaviour [52]. Borg et al [53] and Kim et al [54] suggest that the serotonin and dopamine system could be involved in human transcendence. Urgesi et al found that selective damage to the lower left and right posterior parietal regions of the brain induces a specific increase in self-transcendence [55]. These results point to the active and crucial role of these brain regions in self-transcendence and lay the neurobiological foundations of spiritual and religious attitudes. More recently, Van Elk and Aleman present four different brain areas that play an important role in spirituality: temporal areas associated with visions and ecstatic experiences, multisensory areas related to self-transcendence experiences [56]. The Theory of Mind-network seems to be associated with prayer and the anterior cingulate and medial prefrontal cortex may influence supernatural belief.

Goodenough describes two aspects of self-transcendence, a horizontal one that has to do with the finite, the material, the natural that in turn is part of a cosmic whole that surpasses us, and a vertical one in which, as human beings, we are elevated by an emotion, by art or by a spiritual experience [57]. Within this perspective, the finite, the temporal, and the contingent cannot stand isolated

without mean, but seeks, through the abstract, the sublime union with God as its goal. Such a feeling of connectedness is a source of such joy and satisfaction that it can motivate people to act altruistically, even if that requires personal sacrifices and hardships. Highly self-transcendent people have a perspective of unity and connection that motivates them to work in the service of others, rather than worrying about individual achievement and self-aggrandizement [58]. According to Le and Levenson individualism ('selfishness') is associated negatively with self-transcendence and positively with love [59].

Table 1. Drivers of change and evolution of conspecific lethal violence and religion. The grey arrow shows the reduction of violence and the white one the development of self-transcendence throughout evolution.

Drivers of change	Conspecific lethal violence and religion	
Natural Selection	<ul style="list-style-type: none"> • <i>H. sapiens</i> is violent because of our phylogenetic proximity to apes. • Violence and religion have a medium-high heritability and are traits subject to natural selection. • Religious individuals may have greater fitness by leaving a greater number of offspring and practicing parental care. 	
Social Evolution	<ul style="list-style-type: none"> • Altruistic, cooperative behaviours, religiosity and their interactions can be selected throughout evolution influencing human domestication. 	
Cognitive Evolution	<ul style="list-style-type: none"> • Development of critical, philosophical and theological thinking. • It allows us to think more and better about God (evolutionary theory of religion), moved more by interest than by fear. 	
Cultural Evolution	<ul style="list-style-type: none"> • Spirituality/religiosity is a cultural value. • It is inherited through generations by means of not only genetic but also cultural codes. • The religious moral values transmitted reject violence (although this depends on social and political contexts). 	
Evolution towards self-transcendence	<ul style="list-style-type: none"> • Evidence for the organic nature of religion and violence (localization in brain nuclei). • Self-transcendence (as part of spirituality/religiosity) is the ability to go beyond oneself, approach the divine nature, and discover or give meaning to experience through broader perspectives and behaviours. • Highly self-transcendent people have a perspective of unity and connection that motivates them to work in the service of others, rather than worrying about individual achievement and self-aggrandizement. • Humans can decide between killing our fellow man or, on the contrary, generating more complex and elaborate responses, through intelligence, love and forgiveness. 	

The message of Jesus of Nazareth shows a new alternative against violence based on forgiveness and unconditional love for the enemy. Thus, biological, social, cognitive, cultural and self-transcendent evolution (integral evolution) have transformed us into the first hominid capable of deciding between killing our fellow man (conspecific lethal violence) or, on the contrary, generating more complex and elaborate responses, through intelligence, love and forgiveness. Humans have gone one-step further towards transcendence where, progressively, we approach, with more certainty, the understanding of God [60] and behave with the best attributes of God. We are violent because of our phylogenetic position and because we are primates. We are also violent because that violence has raised the biological fitness of individuals throughout evolution. However, characters such as religiosity, altruism and collaboration have also been selected favourably to increase our species fitness [61]. Whether a peaceful or violent behaviour is selected depends on selective pressures (in human populations defined by cultural, social, economic, political, as well as natural pressures). Therefore, to answer the theodesic question, why are we violent if a love God created us? It is worth remembering one of evolutionary biology father's maxim: "Nothing makes sense if it is not in the light of evolution" [62]. God did not create us but is 'creating' us, through an evolutionary process, in 'His own non-violent image'. This reflection fits in well with the holistic development of the concept of continuous creation [17] and with the idea of the neo-Irenean, who state that modern man is gradually becoming more and more like God, becoming, over time, more and more like the divine nature [11]. They also fit with the continuous and dynamic creation theory of R. John Russell and A. North White-Head [63]. Table 1 shows the most characteristic aspects of each type of evolution. It summarizes the hypothesis that human beings are less violent as we become more transcendent and closer to our divine reality.

6. Epilogue

Finally, and from a theological point of view, if we accept the arguments shown in this article, which explain the evolution of violent behaviour, the theodicy's pressures are relaxed. Theodicy find it difficult to explain how a loving creator God can create violent men and women. An enlightened Catholic view of science must recognize that God 'prefers' to work through complexly interrelated secondary causes (evolution). According to Avise [43] and Ayala [64], Science is a gift for Theology.

Knowing with a high level of certainty what our origin is and that as a species, we are nested in the primate clade, is what we could call, a 'phylogenetic humility cure'. Many are the knowledge gaps about the engines of change that have transformed us into what we are today, but what is true is that the result is overwhelming. For me, without a doubt, today we are closer to knowing the reality of God and to look more like Him than 200,000 years ago. Sometimes theologians and believers 'become frightened' of scientific evidence.

It makes no sense that we refuse to admit the knowledge that Science is providing just because we believe that would leave God in a 'bad place'. The less we need God, the closer we will be to Him [65, 66]. A world in evolution presents us with the option to believe that this natural process is either God-oriented or erratic [67]. As believers and scientists, we should be able to accept evolution with all its consequences [68] and build, based on it, a useful and updated theology. Theology strives to understand the revelation of God in this world; therefore, Theology cannot develop its search task obviating the reality of this world. It is necessary to seek a reliable knowledge of the world with the help of basic sciences, always with a critical attitude towards what the sciences discuss, given that Science by its very nature is in continuous change.

7. Conclusions

Conspecific lethal violence, a crime in most civil societies and defined in the commandments of most of the great religions as unacceptable conduct, cannot be reduced exclusively to a moral question. According to my exposition, it is rather the result of processes of complex evolution that integrates genetic, cognitive, social, cultural and self-transcendent changes. These drivers of change have achieved that, despite the apparent violence that we suffer, *H. sapiens* are now less violent towards its fellow humans than 200,000 years ago. Thus, under the prism of Evolution, the 'creation' of our species is not finished but is rather a process subject to continuous changes. This metanoia brings us closer to the attributes of God: goodness, non-violence and forgiveness, and makes us more 'in his image and likeness'. This scientific-theological argument relieves the pressures of the Theodicy, which fails to explain why a good God creates a violent nature and humanity.

This article is an example of how Science can help clarify theological problems. With this contribution, I propose a new field of study where the theories of Evolution and Neurobiology will be the basis of a theology of behaviour, creatively incorporating scientific knowledge to an updated, systematic and utile theology. A new contribution to provide believers with tools that will allow them to participate comfortably, alongside scientists, in the public sphere, as proposed by Reid and Wilkinson [69].

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