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# Darwinism and its impact in the recent Greek press

## Abstract

Darwinism as a scientific theory places humanity in nature. The way we interpret Darwinism plays a major role in the way we decide to place nature in culture. How do Greeks of today view the applications and repercussions of Darwinism in relation to various fields such as science and religion?

With 2009 came the 150th anniversary of Charles Darwin's first publication of his *Origin of species* and the 200th anniversary of his birth. In academia and also in the media this led to a vast amount of discourse associated with Darwinism. This article investigates the views on Darwinism and its impact as voiced by several key scientists and journalists in the Greek press in and around 2009.

## Introduction

The purpose of this research was to obtain some Greek perspectives on Darwin's impact as reported in several newspapers (print and online) from Greece. This was during and around the time of the 2009 double anniversary which celebrated the 150th anniversary of Charles Darwin's first publication of his *Origin of species* and the 200th anniversary of his birth.

It is primarily a qualitative rather than quantitative exploration of the impact of Darwinism as addressed in several Greek newspapers published in Greece. Apart from some data from the Gallup polls based on the general Greek population, this article's focus is in relation to the comments and views of those at the forefront of their field of science.

The authors of the articles investigated include well-informed journalists in conversation with prominent evolutionary biologists and geneticists, as well as articles by the scientists themselves.

## Discussion

The initial cursory read of papers showed a plethora of articles on the topic of Darwin and his impact as reported in the Greek print and online media, in the period around 2009. Although I examined numerous newspaper articles, for the purpose of this article, I restricted my commentary to a limited number. They consisted of those articles associated with influences which have in the past played a significant role in shaping society and culture, and some relatively recent influences.

Unless otherwise specified, the articles relevant to this study are from the following mainstream daily Greek newspapers in Greece: *Ελευθεροτυπία* (*Eleftherotypia*), *Καθημερινή* (*Kathimerini*), *Το Βήμα* (*To Vima*), *Τα Νέα* (*Ta Nea*). These are all available in print but also online: the immediate accessibility of the latter version facilitated the investigation, highlighting the importance of global media online. The importance of online journalism lies in its ability to readily disseminate scientific information. The *Kathimerini* also has an abridged English edition and the *Eleftherotypia* has a Sunday supplement entitled *Έψιλον* (*Epsilon*).

My study showed that these Greek articles tend to take one of three forms. The first type is articles containing a substantial amount of quoted text which had been translated word for word from English into Greek. There would be little or no commentary containing the views of the Greek writer of the article; the translated text, for itself; thus communicated the information yet deflected the ownership of any sensitive material away from the Greek author. Often the English text was derived from primary sources such as a book or publicized statements of an individual or organization, or from an interview by a prominent person conducted by the author of the article. In other words, these articles reflected the passive acknowledgement of what was being said outside Greece. An example of this is the article from the *Kathimerini* 'Religion and Science were not always enemies' (Maglini 2009). It is an interview with John Hedley Brooke, Emeritus Professor of the History of Science at Oxford University. Maglini basically asked Brooke

about his views on the complex and difficult relationship between science and religion in general and also in America. Brooke stated:

*[...] a declared atheist in America is in danger of social isolation, something which would not have ever occurred e.g. in England. [...] It is contradictory in the country of progress and ideas and technology that there is such regression. It is also very worrying. It shows, if anything, that progress in science and technology does not necessarily mean that there is progress in society also.*

The current Prime Minister of Australia, Julia Gillard, soon after her appointment publicly declared she was an atheist. In Greece, as in America, it would be very unlikely that any such public figure would make this statement. Maglini does not comment on Brooke's statement about and indeed does not add anything of his own to the article.

The second type of articles, and those most commonly encountered, are from local Greek journalists, scientists, historians of science and biologists who are relaying the information on Darwinism and its impacts, but in their own words. Some of these note that the main or only source of information is foreign, for example from a book on the history of science. Again the articles tend to show little or no critique by the writer of the article. These deal with topics such as Darwin's biography, the history of evolution and the impact of Darwinism in various disciplines. An example of this type of article can be found in the *Vima* entitled 'Darwin's Bulldog' and it is written by molecular biologist Dr Joanna Soufleri (2009c). It is about Thomas Huxley, Charles Darwin's key advocate. The article is representative of the comprehensive and very informative series '200 Years Darwin' which the newspaper ran in 2009. Another example of this type of article is from the *Kathimerini*, 'Report on Darwin and the theory of evolution' (Karkayiannis 2009). These articles serve to communicate the often complex knowledge to the broader public readership by presenting it in a comprehensible and interesting manner.

The third type of articles are the rarer ones written by local Greek journalists and scientists who are actually providing their views on topics associated with Darwinian evolution and its impact in Greece. More specifically the aim here is to obtain an insight as to how these specialists see Darwin's influence in general and what they may say about its effect in Greek society.

Nonetheless, all three types are important, each playing a distinctive role, though, of course, there may be articles which have features of more than one type. The articles may be found in a special section of the newspaper. It is the last type of article that I have predominantly been interested in. I will share some of the quantitative information that I have noted from these articles.

### There are several Gallup polls

A Gallup poll of 400 people in Greece was published March 18, 2007 in the *Sunday Eleftherotypia* (Giannakidis 2007). One of the questions asked was: 'Have you ever heard, seen or read about anything to do with Darwin and his theory?'

- 52% had no idea about Darwin and his theory (Giannakidis 2007: 44).
- Out of those 48% who had heard of Darwin and his theory (Giannakidis 2007: 46):
- Only 13% accepted Darwin's theory completely
- 50% accepted it in part (does not specify which part of the theory)
- 27% rejected it completely
- 10% did not answer.

This would mean that 63 per cent of the 48 per cent agree in whole or a part thereof. We can therefore extrapolate that only around 30 per cent of the whole population had answered in the affirmative to the question.

On the other hand, on January 11, 2009 the *Kathimerini* (Prinou 2009) reports on a Gallup poll published in the journal *Science* (Miller, Scott & Okamoto 2006: 765–766). The participants were asked whether they thought human beings, as we know them, evolved from earlier life forms. Thirty four countries were involved including Greece. Only 54 per cent of Greeks replied that this statement was correct, placing Greece in 28th place, with first place going to Iceland at 80 per cent as the most accepting.

Eleftherios Zouros, Professor Emeritus of Evolutionary Biology at Crete University, in dialogue with journalist Caroline Papacosta (2009) in the newspaper *Ta Nea* in an article entitled '20 questions in Greece Darwin is...under house arrest', states that only 54 per cent of Greeks agree with evolution. It is very likely that Zouros is also referring to the study by Miller et al. (2006).

It is worth comparing these figures with those of the United States. Not reported in Prinou's (2009) newspaper article, the Gallup poll by Miller et al. showed the United States came 33rd with only 40 per cent showing acceptance (Miller, Scott & Okamoto 2006: 765–766). In 2001 a Gallup poll of 1000 showed 45 per cent believed evolution played no role in humanity (Quammen 2004: 6). In 2008 figures show that this percentage has not changed in essence, with more than 40 per cent not believing in evolution (Dawkins 2010: 7, 430–431).

The statistics from the three independent US sources are comparable and more than likely to be an accurate reflection of its society. On the Greek perspective Giannakidis' (2007) results of 30 per cent of the total population is rather at odds with the poll by Miller et al. which shows 54 per cent acceptance of the theory in some form. The demographics, size of the population taken, and the wording of the question would certainly affect the statistics; with the demographics most important in skewing the result. Hence Giannakidis' sample of 400 might not reflect as accurate a statistic as that of the sample of 1000 participants in the poll by Miller et al.

However, if Giannakidis is correct then Greece is much less accepting of Darwin's theory than the United States, which is well publicized as having widespread fundamentalism with intense negative reaction to, and debate on the theory. If the poll by Miller is more accurate then Greece is mildly more accepting than the United States.

What the poll by Miller et al. does not show, but is clearly demonstrated by Giannakidis, is that more than half of the 400 of the Greek population had not heard of Darwin and his theory. If these numbers are a reflection of the whole Greek society then it reveals a serious lack in the teaching and public discussion of Darwin's theory of evolution and probably also a lack of any interest in it.

## The church

In Greek Orthodoxy there is still no official stance on Darwin's theory of evolution. Individuals and groups within the church have made statements in the past but they have all been unofficial.<sup>1</sup>

A very significant and comprehensive discussion is reported in the *Vima Ideon* which is a special segment of the *Vima* newspaper (Kouvelas

2009). The article is entitled 'The theory that challenges even today'. The discussion is between four Greek academics prominent in their fields of science. At the table leading the discussion is Emeritus Professor Elias Kouvelas of the School of Medicine at the University of Patras. The others are: Emeritus Professor of the History of Science and evolutionary biologist Costas Krimbas at the University of Athens; Emeritus Professor of Biology Eleftherios Zouros of the University of Crete; and Professor of Molecular Genetics Babis Savvakis at the Medical School of the University of Crete.

This six-page article, which summarizes the discussion, informs the reader about various aspects of evolution. These include: Darwin's theory of evolution, background on Darwin himself, aspects of the history of evolution associated with Darwin, Lamarck, Wallace and the synthesis theory. It also covers the repercussions of Darwin's theory such as those affecting religion; sociobiology and neo-Darwinism.

In this article Krimbas makes reference to theologian Vasilius Makridis' academic article of 1998 on orthodoxy and evolution in Greece (Kouvelas 2009), (Makridis 1998: 173-220). Krimbas gives a summary of Makridis' four categories of religious views in relation to Darwinian evolution which are reflected in the Greek population. The first view supports that Genesis is the only truth with science playing no part. The second view regards the events in Genesis as symbolic, so that one is free to accept scientific evidence. The third, which was developed by theologian Savvas Agouridis, claims that one should not look for the truth in Genesis. The fourth view that Krimbas refers to is that of the Bishop of Pergamon John Zizioulas. The Bishop believes that Darwin's theory is correct and that it helps humanity to understand and love the other species of the natural world, and so to develop an ecological conscience.<sup>2</sup>

Again, in Papacosta's article when Zouros is asked if there is a God he says: 'On this I am no more qualified to answer than anyone else'. It is interesting that he does not actually give a 'yes' or 'no' answer. Later in this article I discuss how Zouros and some of his colleagues refer in a positive manner to the lack of a Designer according to neo-Darwinian theory (Kouvelas 2009). One could say here then that the question posed to Zouros by Papacosta is under the banner of religion, where had he negated the presence of a God, it would have been perceived in an unfavourable manner by the majority of readers. In contrast to this though referring to the lack of

a Designer as per Darwinism does not seem to create the same negativity. Either this is viewed differently under the guise of science or simply people do not understand what is meant.

Zouros is asked if he believes that the Orthodox Church maintains that it never condemned Darwin. He replies: 'It did not condemn him but also it did not acquit him. It has him under house arrest without a prosecutorial decree.' Further to this he is asked whether the relations between faith and science in Greece have been restored. He replies: 'There will be no restoration unless the State [truly] is separated from the Church.'

When asked whether Intelligent Design has a scientific basis he answers: 'Absolutely none. Moreover it is derogatory for the "designer" since any form of life is not without flaws'.<sup>3</sup>

In the *Kathimerini* Marina Ralli writes about how various heads of churches such as the Pope have agreed that accepting evolution does not mean that one cannot believe in God (Ralli 2009: 25); a view also promoted in the *Vima* by Stamatis Alahiotis, Professor of Genetics at the University of Patras in Greece (Alahiotis 2009). Peter Bowler a historian of science at Queens University in Belfast discusses at length 'the falsity of the claim that serious engagement with religion must necessarily require a rejection of Darwinism. A middle ground does exist, for all the efforts of extremists on both sides [Darwinians and anti-Darwinians] to conceal it' (Bowler 2009: 380).

### High school teaching of Darwinian theory

The teaching of Darwinian evolution in Greek high schools has been generally non-existent and this has been frequently raised by academics and teachers of biology. Even though Darwinism is on the syllabus, little or no time has been allocated to its teaching. Possible reasons (Prinou, Halkia & Skordoulis 2005: 2) as to why the theory of evolution has, till recently, been excluded in the upper secondary school in Greece could be associated with the following, according to Professor C. Tsoukalas (1992: 539) of the University of Athens:

*There is a permanent relationship between education and the Church, which is shown by the coexistence of the educational and religious matters under the same Ministry of Educational and Religious Affairs, even up until today.*

Souferi (2009a) records in the *Vima* that in a public statement June 21 2006 there was unanimous agreement between the Academy of Athens and

66 other National Academies of Science to support the teaching of evolution in schools. Despite this push by these otherwise influential academies, newspaper articles by various academics and educators continued to point out the lack of teaching of Darwin's theory.

Professor Zouros (2008) writes in an article dated 15 April 2008 in the English edition of the *Kathimerini* 'The science of the 21<sup>st</sup> century: the phenomena of evolution can no longer be questioned' regarding the teaching of evolution in Greek high schools:

*All the evidence from every science confirms it. It is clear that the authorities simply don't want to look at the problem directly and are simply getting around it. The reasoning given is that 'we don't need to cause unpleasantness, let them learn it at university' [...] It would be far more honest to invoke reasons of tradition or faith. For every other argument is doomed to collapse.*

The journalist Lina Giannarou (2008) in the English edition of the *Kathimerini* wrote an article entitled 'Charles Darwin's exclusion from schools', also dated April 15, 2008. In it she also talks about the resistance to the teaching of Darwinian theory in Greek high schools. She notes that according to Professor Zacharias Skouras of the Aristotle University's Department of Genetics, the theory of evolution 'by nature resists the establishment mentality, it has a revolutionary aspect'. Giannarou indicated that 'it is clear that the state is unwilling to dispute the issue with the Church and a sector of society'. She wrote about an anonymous biology teacher who said:

*Is the ministry afraid of the political cost? What is certain is that evolution is not taught and it does not seem likely that it will be taught in Greek schools anytime in the near future. And we dare make fun of the Americans. At least there is a debate in the United States of America.*

Again this highlights the lack of debate. Another biology teacher, Marilena Zarftzian, quoted in the same article:

*It is true that Greek society is afraid to look clearly at this issue. The repercussions, however, are already visible. A large percentage of 16 year olds believe that human beings do not belong to the animal kingdom. The replies they give to questionnaires on this issue are very conservative.*

On February 13 2009 the *Vima* daily newspaper published an extensive and emotive 'letter' written by Professor Alahiotis to Darwin in his

honour, had he been here to read it. It was for the celebration of the 200th anniversary of his birth on 12 February 1809. In this letter, Alahiotis (2009) confesses the following to Darwin:

*Do you know that I have tried from the end of 2000 for the Chapter on evolution to be included in the upper high school curriculum? But I have not succeeded. [...] The power of bureaucracy is great and ongoing. What fault is it of the students who without the unifying power of evolution find it difficult to more deeply understand the biosphere, but also difficult to understand their place in life within it, what it entails, and about respect for the environment.*

In an article entitled ‘The unholy as holy’ by journalist Stelios Elliniadis (2010) in the *Eleftherotypia* dated 28 February 2010, he speaks with Eftyhis Bitsakis, editor of the Marxist journal *Utopia*. Bitsakis is quoted:

*As the religious conscience of an individual should be absolutely respected, the same freedom should be given to the shaping of a child’s world view, based on scientific data and wholly of rational knowledge. Finally, in Greece we have never attained a true secular state.*

The following is in reference to an article from the newspaper *Kathimerini* entitled ‘I would like a peace-loving story’ dated 20 December 2009. It is an interview with Professor Krimbas (Bakoyianni 2009). The 77-year-old professor associated himself very early in life with spreading the word on Darwin’s theory of evolution. In the article he discusses several issues, including how 30 years ago when he co-wrote a biology book for upper high school in Greece, the phrase stating that man and ape had a common ancestor was cut out. He indicated that until then evolution was not taught in Greece, and so as not to have the book completely removed he agreed to the removal of the phrase. What prompted all this was the following, as he said:

*The telegrams were arriving at the Education Dept. saying that it was shameful for Greek youth to be taught that they originated from a beast. Those sending the telegrams were asking for the textbook to be burnt.*

As indicated by Zarftzian (Giannarou 2008):

*Without learning about the evolution of species, their common origins, children will never see the world as a whole. They aren’t able to acquire a sense of ecology. When you don’t have a sense of your brotherly relationship with the other species on this planet, the animals and plants, you don’t respect them, you see them as being beneath you.*

## On Greek identity, Greek nation

After Darwin's 1859 *Origin of Species*, his theory of evolution was received in Greece in a delayed manner, only translated to Greek in 1915 by Nikos Kazantzakis, later than most European countries. Well into the twentieth century as noted by Krimbas (1993: 82) for the Greeks:

*Darwinism constituted one of the 'external' ideological movements [...] in contrast with those which were born and formed to respond to deeper 'internal' ideological currents, such as the views on the continuity of the Greek nation and the three stages of its history, the Great Idea, the language restoration etc.*

Further to Krimbas' observations it should be noted that issues such as the Greek identity, continuity and language, though intensely analysed from a historical and social perspective, have been subjected to a Darwinian interpretation by intellectuals and academics of the late nineteenth to early twentieth centuries.

Not surprisingly, issues such as the continuity of the Greek nation still fiercely occupy the minds of the Greeks. There is an ongoing controversy, amongst many in Greece and in the diaspora, associated with the question of contemporary Greek identity. To many, Greek identity is inextricably connected historically and culturally with Christian Orthodoxy. Hence, anything like Darwinism which could negatively influence one's religious beliefs could be considered a threat to this Greek identity, which many consider is connected to a historical continuity back to ancient Greek times and Byzantium.

In an article entitled 'The development of religious faith arises from the genetic record' dated 24 October 2009 in the *Eleftherotypia*, journalist Spyros Manouselis (2009) interviewed Krimbas. He comments in reference to Rena Stavridis-Patrikiou's 2008 book *Fears of a Century*:

*The advocacy of identity plays a significant role for the Greeks: the fear of our identity being at stake is caused by the insecurity of losing our link with our ancient ancestors. Tradition, an element of continuity, includes of course also the Orthodox Church. This way the view of certain obscurantist clergy (because there are also enlightened exceptions) acquires greater scope.*

Further to this on the Greeks' fear for their national identity he goes on to say:

*How was Greece formed? If you go outside of the University of Athens you will see four statues. On the one side is the Patriarch Grigorios the Fifth and on*

*the other side is Rigas. In the name of God, the Patriarch had excommunicated Rigas!...And in front is Kapodistrias with Korais. But Korais considered Kapodistrias to be a tyrant! [...] As a nation we have taken contradictory elements and we have connected them to make an identity. So, some believe that if you touch on one of these components then...we are threatened. (Manouselis, 2009).*

Krimbas satirized what he perceives as the Greeks' heavy reliance for national identity on famous historical and religious figures associated with the 1821 Greek War of Independence. Nevertheless Krimbas maintained that from his perspective 'the Orthodox Church has never made a statement for or against the theory of evolution'. The reactions, he says, 'come from organizations, religious circles and clergy' (Manouselis 2009).

The interviewer then asks him 'what does it mean to a young person not to be taught the theory of evolution correctly? Krimbas' (Manouselis 2009) answer is:

*For a nation to survive, it cannot live in days gone by. That is, it must form a new outlook, dependent on scientific progress. Science is part and parcel of it. We cannot say that I am taking the aspirins but I will throw out the other tablets. If we want to survive, we must adjust, like the other countries of Western Europe. We need to eventually somewhat change our idea on identity so that it is in line with this progress.*

Its worth noting that Krimbas has written extensively on the history of evolutionary theory, including in Greece. He has also taken part in the biological debate in relation to national conscience and cultural identity (Krimbas 1986: 217–224).<sup>4</sup>

### Neo-Darwinism and sociobiology

In the late nineteenth century before the discovery of genes the interpretative power of Darwinism was utilized to explain anything and everything. It was used in numerous disciplines and also in the literary world, as was mentioned in the last section. It was also popular in the form of Herbert Spencer's 'Social Darwinism', a quasi scientific theory. Many used this alongside Darwin's theory and applied it to human behaviour and culture in society. What emerged since the Mendelian synthesis of genetics and Darwin's theory are the ideas of sociobiology and also gene-culture evolution whereby human behaviour and culture are now researched via genetic evolution.

Here I will be dealing with the 2009 article mentioned earlier with Kouvelas (2009) in discussion with his colleagues Krimbas, Zouros and Savvakis. In a segment of the article they communicate to the readers of the *Vima* the ideas of sociobiology and also neo-Darwinism. On neo-Darwinism Zouros stated the following view, also articulated by Krimbas in the same article:

*The most significant thing for me is that neo-Darwinism removes teleology or teleonomy from any religious system. That is, it says purpose does not exist and that things evolve by natural laws without tending towards some goal.*

In the article Krimbas talked about his book *Η Κοινωνιοβιολογία* (*Sociobiology*) which is reminiscent of Edgar Wilson's 1970 *Sociobiology*, in which social behaviour is considered to often be genetically transmitted and subject to evolutionary processes. Krimbas discussed the interpretative power of Darwinism with respect to various phenomena, social and other (Kouvelas 2009):

*It is an effort that met with fierce opposition, mainly for political reasons. The retort came from Marxists who would have wanted all social phenomena to be reduced again to social and not to biological phenomena. It is an interesting conflict which still exists today with less intensity. It has two positive sides: Those opposed in sociobiology are trying to contain the discussion on Darwinism and sociobiology to within purely scientific contexts. A positive side is also that socio-biology has started to influence very many sectors such as Darwinian medicine, evolutionary psychology, the school of evolutionary economics, ethics, even history and literary criticism.*

As an example Krimbas discussed the theory of neural Darwinism: *When the stimulus passes many times, the synapse is strengthened, therefore the circuits are strengthened. This strengthening is a form corresponding to selection. [...] in the end selection occurs and this means that the mechanism is Darwinian.*

Subsequent to this Krimbas and his colleagues posed the question: is Darwin's theory a theory of everything? Savvakis did not believe so:

*[...] the reason is that there are phenomena and processes which occur at a high level of complexity dealing with society, language, culture, things which cannot be explained by way of genes. In contrast to the transmission of genetic information they occur horizontally and very rapidly. For genetic traits to prevail thousands of years are needed, whereas ideas and perceptions,*

*constructs of human society, can be transmitted in less than one generation. Maybe sometime, after many years, people may celebrate a major new synthesis of sciences, but maybe it may not ever happen. The phenomena of life cannot all be reduced to genes and evolution.*

Zouros stated, 'The spread of Darwinism is indeed vast, but there is a need for caution. We cannot say that Darwinism by definition interprets everything.'

Note that in a later article Zouros was asked why evolutionary theory has become a kind of scientific vision of man, not only as a biological but also as a social being:

*We constantly see more parallels than we suspected between biological evolution and the evolution of language, the arts, religion. Biological and cultural evolution are fused and unified through humanity. (Papacosta 2009)*

In the article by Kouvelas (2009), Krimbas noted:

*The physical scientists also want to create a theory of everything but so far they have not succeeded at all. I believe that Darwinian theory can contribute to this. We are selected to understand the mesocosm, neither the very small nor the very great scale of things. One theory which will explain to us why we cannot have a theory of everything I think will be exactly the same thing, a theory of everything.*

Interesting though is the interview Zouros did in June 2009, noting that the discussion with Kouvelas and others was reported in January 2009. In the later interview (Soufleri 2009b) Zouros referred to the interpretative power of Darwinism:

*[...] every system which has the properties of reproduction, mutation and selection is a Darwinian system. It is now known that the living world is one such system and it represents biological evolution. Other systems, such as languages, religions, the arts, the science, can be considered Darwinian systems to the extent they constitute reproducible, mutating and selectable information. Inclusively, we refer to these as cultural evolution [...] The attestation of cultural evolution as a Darwinian system can be proven fruitful, without this meaning that this attestation claims the exclusive, perhaps not even the primary interpretative role; [and that] man is the most impressive, but not the only, result of the fusion between biological and cultural evolution.*

## Conclusion

This article provides a small but significant insight into how the Greeks dealt with the ideas of Darwin's theory and its influences around the period of Darwin's double anniversary.

There was substantial publicity for the anniversary with scientists and teachers of biology taking this opportunity to inform the public of Darwin's impact on society and his theories. The newspapers also communicated Greece's low acceptance of the theories as compared to other countries. They were also able to highlight the importance of its interpretative potential in various fields such as medicine, biology and ecology.

In a country that has not given the topic of evolution an important place in high school education, strangely I found that there was no significant commentary written by Greeks which was actually against Darwin's theory of evolution, or any article criticising it in association with religion, apart from that of Fougias (Zarimis 2007). Nor were there any articles supporting Intelligent Design or creationism. Essentially there was no apparent heated debate.

Articles showed that explicit religious declarations of faith were all but excluded from public discussion amongst scientists, unlike dialogues seen in other western countries during the anniversary year. Perhaps religious convictions motivated certain individuals in their initial choice of sides, but these convictions were not voiced openly as being relevant to their acceptance or rejection of evolutionary theory.

It is worthwhile posing the following question: does *not teaching* Darwinian theory and its importance perpetuate an anthropocentric rather than biocentric identity for the Greeks? There was a strong sense from educators of biology that ignorance of Darwin's evolutionary theory has created a general lack of ecological conscience amongst the Greek youth. It is reasonable then to say that since evolution had never been systematically taught at the high school level many people, as Giannakidis' (2007) polls show, would not know or really understand it.

Bowler (2009: 381) in the final words speaks of:

*the immensely complex sequence of new ideas and factual discoveries [...] have shaped the emergence of evolution theory. That process is ongoing, and we should welcome the continuing debates as a sign that this area of science is as active as any other. To turn the clock back to a theory of the earth and a natural*

*theology constructed by theologians in the seventeenth century would be a betrayal not only of science but of Western culture itself.*

Though the reference to regressing to seventeenth-century science may appear somewhat exaggerated in relation to Greece, the message is that Greece needs to foster healthy debate and dialogue in order to present as a progressive state.

### Post script

Since writing this paper I have been in communication (dated 15 May 2012) with Lucia Prinou who I have referred to in this paper. She is at the forefront of the teaching of evolutionary theory in Greek schools. She now states that since writing her articles, due to the 2009 double anniversary of Darwin and the concurrent promotion of his theory in the media, the Education Department has stopped removing, as she puts it, from the curriculum of the 3rd year *Lykeio*, the chapter on 'Evolution'. This includes Darwin's theory but not the current revised theory.

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## Notes

<sup>1</sup> In 2004 the then Archbishop of Athens and All Greece, the conservative Christodoulos Paraskevaïdis had spoken about the theory of evolution at length, rejecting it and also neo-Darwinism (Paraskevaïdis 2004). Despite his high status in the Greek Orthodox Church this view was not an official stance of the Church.

<sup>2</sup> I found one short article in the *Eleftherotipia* by a Dr Fougias who ridiculed the Bishop for accepting Darwin's theory on the basis that it helps humanity understand the other species and that it encourages ecological conscience. Fougias quoted the Genesis creation in Eden, indicating that humanity was always ecologically conscious. He went on to say that such novel views are mostly from bishops of the Anglican Church and that all that remains is to have Darwin's photo posted on the Orthodox Churches since his theory is so 'correct and complete' (Fougias 2009).

<sup>3</sup> Following this line of thought, if all life-forms have flaws, their designer, if such exists, cannot be perfect.

<sup>4</sup> Many Greek intellectuals and politicians of the late nineteenth to early twentieth centuries, had taken a biological approach, and in particular a Darwinian approach on the concepts of Greekness, the continuity of the Greek race and language from ancient to modern times (Zarimis 2007).