If we are to analyse accurately some of the typical generative movements of science into literature, we should not look for tight equivalence but rather for fugitive allusion, a changing of contractual terms and paradoxical appropriations of ideas in an incompletely argued form.

(Gillian Beer, 1990:785, Beer's italics)

While literary writers have responded creatively to Darwinism since its beginnings with The Origin of Species (1859), literary scholarship has reacted accordingly — but not within Greece. Literary scholarship which takes a Darwinian approach to the various genres of modern Greek literature is scant in proportion to the plethora of scholarship on non-Greek Darwinian literature. This paper is derived from a section of my doctoral thesis which examines Darwinian and other evolutionary thought in the early twentieth-century writings of Grigorios Xenopoulos. The paper provides a synoptic view of the Darwinian thought in selected letters written by Xenopoulos in the children's magazine Η Διάπλασις των Παιδών (The Children's Guidance), which was published between 1879 and 1948. It focuses on the gender issue, the issue of religion versus science and in particular creationism versus evolution theory; and finally Xenopoulos' use of Darwinian concepts, such as gradualism, in discussing human character. The paper not only provides some insight into Xenopoulos but also reflects the impact of evolutionary ideas in society at the time, at a local and international level.

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Note: for all cited Greek texts I have kept the spelling and punctuation as in the original but I have used the monotonic accent system.
Background

In a nutshell, Grigorios Xenopoulos (1867–1951) is well known as novelist, playwright and critic. However, Xenopoulos’ first interest before literature was science. From 1883, he pursued the first few years of a degree in the sciences, which included botany, physics, mathematics, astronomy and mineralogy. Amongst other intellectual or philosophical works, he had read most of Darwin’s work in French in his university years well before Kazantzakis’ Greek translation of the *Origin* in 1915 (Xenopoulos 1972:162). He was very well read not only on local issues but also on international issues and intellectual trends.

Periodicals

The Athenian weekly children’s magazine *Η Διάπλασις των Παιδών* (*The Children’s Guidance*) was published between 1879 and 1948. Between 1896 and 1948, Xenopoulos, under the pseudonym of “Φαίδων” (“Faidon”), contributed to the magazine in the form of the “Αθηναϊκά Επιστολαί” (“Athenian Letters”). The letters, totalling around two thousand, cover numerous areas in which Xenopoulos was interested. Malafantis’ study has looked at these as a whole and categorised them according to certain areas of interest; he has commented on a representative number within each of his divisions (Malafantis, 1995).

The magazine, albeit a children’s magazine, was widely read by all ages. Although it continued well into the twentieth century, it epitomises the advent of nineteenth-century periodical literature, which flourished as an important medium for communicating ideas to the wider educated public. Serialised short stories, scientific and non-scientific issues were to be found side by side. Such popular weekly periodicals and intellectual quarterlies examined scientific ideas. Particularly with the British press, this type of periodical has been documented as having played a major role in the public debate which followed, after the publication of the *Origin* (Ellegard, 1958; Oldroyd, 1980:193–203; Cantor and Shuttleworth, 2004).²

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1 It is worth noting that next to his love of literary matters Xenopoulos revealed in his "Athenian Letters", a love of nature, a trait he shared with the naturalist Charles Darwin. Malafantis notes in his study that nature was the second most discussed category in the "Athenian Letters": foremost was literature (Malafantis, 1995:73).

2 In Greece, periodicals which discussed Darwinism include *Estia* (*Estia*), Παρνασσός (*Parnassos*), Προμηθέας (*Prometheus*), Παναθήναια (*Panathinaia*) and Ανάπλασις (*Anaplasis*). A comprehensive study of the Greek periodical literature along these lines has not been forthcoming. However Sotiriadou examines responses found in the early periodicals *Prometheus* and *Anaplasis* (Sotiriadou, 1990:142–56; see also: Vlahakis, 2000). Other periodicals include Φύσις (*Fysis*) of the early 1900s.
“Boys and girls”

In 1916 Xenopoulos wrote an “Athenian Letter” titled “Boys and girls” (“Αγόρια και κορίτσια”) (Xenopoulos, 1916:65). The letter is reminiscent of sections of Darwin’s *The Descent of Man* (1871) inspired by the craniological studies of Carl Vogt at that time (Darwin, [1871] 1981). Xenopoulos indicates that his information is from a lecture he attended at university. He does not say when he attended this lecture, that is, whether it was when he was a student at university or later. Indicating that the information is only a portion of what was said in the lecture, he compares the brains of the male and female, and comments on the differences in their mental powers. The following excerpt from the “Athenian Letter” should be read, taking into account that Xenopoulos wrote it as an educational message to instruct young readers:

[Η Γυναίκα] δεν είνε καθόλου κατώτερο πλάσμα από τον Άνδρα, όπως πιστεύεται από πολλούς, αλλά σοφόνυμικ από και σε κάποια πράγματα ανώτερο [...] Η Γυναίκα λοιπόν, κατά τα τελευταία πορίσματα της Επιστήμης, έχει εγκέφαλο πιο λεπτό από τον ανδρικό· η φυσική αντίληψη, η μνήμη και η φαντασία είνε στη Γυναίκα δυνατότερα, κι αισθάνεται περισσότερο από τον Άνδρα την αγάπη, τη χριστιανική αγάπη εννοώ, το “αγαπάτε αλλήλους” — τη συμπαθεία και τον οίκτο, με άλλους λόγους είνε λιγότερο εγωίστρια. Η Γυναίκα, καλλιεργώντας το μυαλό της, μπορεί να κάμη ό,τι κάνει κι ο Άνδρα. Με την καρδιά της όμως, κάνει περισσότερα κι από αυτόν. Αν ο εγωισμός είνε χρήσιμος για το άτομο, ο αλτρουισμός όμως, η αγάπη του άλλου, είνε απαραίτητη για την κοινωνία. Η Γυναίκα λοιπόν, με τα ψυχικά της προτερήματα, είνε κοινωνικότερη από τον Άνδρα (Xenopoulos, 1916:65).

[Woman] is not at all a lower being than Man, as is believed by many, but equal and in some things superior [...] So Woman, according to the latest findings of Science, has a more delicate brain than the male; natural ability in perception, memory and imagination are stronger in Woman, and more so than Man she feels love — I mean Christian love, the “love of others” — sympathy and compassion; in other words, she is less selfish. Woman, cultivating her mind, can do whatever a Man does. With her heart however, she does more than him. If selfishness is useful for the individual, altruism however, the love of others, is indispensable in society. So Woman, with her superior mental qualities, is more social than Man (my translation).

By comparison, Darwin writes in the *Descent* on the “Differences between man and woman” and their “Differences in mental powers”:

[Man’s] brain is absolutely larger, but whether relatively to the larger size of his body, in comparison with that of woman, has not, I believe, been fully ascertained [...] Woman seems to differ from man in mental disposition, chiefly in her greater tenderness and less selfishness [...] Woman, owing to her maternal instincts, displays these qualities towards her infants in an eminent degree; therefore it is likely that she should often extend them towards her fellow-creatures [...] It is generally admitted that with woman the powers of intuition, of rapid perception, and perhaps of imitation, are more strongly marked than in man [...] In order that woman should reach the same standard as man, she ought, when nearly adult, to be trained to energy and perseverance, and to have her reason and imagination exercised to the highest point (Darwin, [1871] 1981, 2:316–28).
There are striking similarities between the two passages. It would appear that Xenopoulos not only had absorbed Darwin’s manner of observation of cranio-anthropological data, but had also taken on a significant amount of the actual content and approach. The approach in both cases would appear to be that the cranio-anthropological observation gives credence to the information that is to follow. Xenopoulos’ intention, as he mentions in the letter, that is, to show woman’s equality, if not her superiority in certain aspects, came at a time when Xenopoulos was supposedly an overt supporter of the women’s movement in Greece.3

Darwin’s detailed study, of which the above passage is only a small excerpt, comes to some further significant conclusions; Xenopoulos would have been aware of these but he did not include them in his letter. After observing that, “with woman the powers of intuition, of rapid perception, and perhaps of imitation, are more strongly marked than in man”, Darwin goes on to say “but some, at least, of these faculties are characteristic of the lower races, and therefore of a past and lower state of civilisation” (326–27). He extends his observations to state that in terms of “mental quality [...] man has ultimately become superior to woman” (328). He also argues that even after cultivation of women’s minds it would take many generations of evolution for women to reach the same level of mental power as men.

He concludes that men’s “severe struggle in order to maintain themselves and their families […] will tend to keep up or even increase their mental powers, and, as a consequence, the present inequality of the sexes” (329). Assuming that Xenopoulos did use Darwin’s observations, it is not difficult to understand why he only selected a few aspects from Darwin’s observations. It would suffice to say that by 1916, whether one believed in gender equality or not (in terms of ability and opportunity), it was common practice in countries such as Greece to publicly promote it.

Darwin’s comments associating women with a lower state of evolution had enormous repercussions for women. Although others, such as Herbert Spencer, had propounded the biological inferiority of women, it was Darwin, in this statement, who was interpreted as providing the universal scientific validation. In medicine and psychology this impacted on how women were perceived. This idea about women was also translated into the literary world and became a theme in novels for well into the twentieth century. (See for instance: Greenslade, 1994; Dijkstra, 1986).4

3 Between 1912 and 1921, Xenopoulos wrote a series of “Athenian Letters” which supported gender equality. However, his fiction presents women in a highly sexist manner, even by the standards of that period. An example of this is Η τρίμορφη γυναίκα (The Three-Sided Woman, first published 1917 in serial form).

4 Greenslade (1994:290) highlights literary writers’ use of scientific material on the gender differences which “adopted a standard post-Darwinian position on women’s inferiority to men”. See Greenslade for further on this in relation to the writer George Gissing.
Although the idea was too radical for Xenopoulos to add the “inferior” evolutionary nature of women to his Athenian children’s letter, he was well aware of it. This is reflected in some of his novels, such as Τερέζα Βάρμα-Δακόστα: ένας σύγχρονος Μεσαίωνας (Tereza Varma-Dacosta: the Middle Ages Today, 1926).

Science and religion

Darwinism has had an enormous impact on religion even up to the present day. A series of the “Athenian Letters” reveals Xenopoulos’ preoccupation with the status of religion versus science. It deals especially with Darwin’s theory and its effects on the traditional concepts of God and creation, and also on man’s place in nature. (See also: Malafantis, 1995:216–19). This section of the paper provides only an overview of some of the “Athenian Letters” associated with Darwinism and religion. These letters begin in the early 1900s and continue through to 1939.

Despite his life-long positivist views, which he discusses in his autobiography, Xenopoulos appeared to declare his support for religion in these letters. At various points they reflect his attempts to reconcile religion with science and in particular religion with Darwin’s theory of evolution. This trend had been established by the 1880s when western clerics had realised that Darwinism was not going to go away and that completely condemning it was dangerous for the Church — a repeat of the Galileo case was not to occur. So western churches sought to utilise those same evolutionary concepts of Darwinism to substantiate the fundamentals of Christianity. This trend permeated the works of literary writers who attempted to reconcile religion and evolutionary thought (Gibbons, 1973:6; Henkin, 1963:141–67; Paul, 1972:406). By the turn of the century, the initial Darwinian controversy, which had raged earlier, had subsided to some degree. Darwinism had permeated nearly every discipline and Xenopoulos was one of the second generation Darwinians.

It is worth noting that Darwinism was not mentioned in Greek secondary-education books till well into the 1930s (Sotiriadou, 1990:201–202). Prior to that “biological evolution” was the term used. So Xenopoulos’ introduction of Darwinism into the children’s ‘Athenian Letter’ titled “The atheists” (“Οι αθεϊσταί”) in 1914 was probably rather daring (Xenopoulos, 1914:167).

Interestingly, from early on in his letters, he tactfully argued against creationism. This was creationism in the sense that all living forms arose not from one or few forms, which is what Darwin stated, but were separate acts of creation made perfect, without the need for evolution. This definition of creationism also implied that there was a purposeful designer or God who was responsible for these separate acts of creation. In the letters Xenopoulos pursued essentially an anti-creationist

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5 There appear to be various forms of creationism. The original form was the belief in the literal truth of Creation as in the Book of Genesis. So, often creationists will agree with all or some aspects of this original form.
approach but which saw God as the purposeful designer of evolution. This is demonstrated in the following passage from this letter:

Darwin himself [...] was anything but an atheist. On the contrary, he believed that his theory of evolution showed even more the power and grandeur of a God-Creator. As you would have heard, Darwin, an English naturalist, one of the greatest, through his observations, arrived at the conclusion that animals were not created all at once, but that from two or three original forms all this variety of the animal species was produced by degrees through evolution. And the great scientist Darwin says at the end of one of his books: how does my theory harm the idea of God? Whether all the animals were created independently, or whether there were at the beginning two or three, or only one protozoan, from which the other animals were formed — is it not the same? And indeed, does not the creative power of God appear still more wondrous and more magnificent when we accept that only one protozoan was created by Him in such a way as to produce the whole of the animal kingdom? You see, my dear readers, that one can accept Darwin's theory and still believe in God the creator and lord of everything (my translation).

In 1923, Xenopoulos developed his ideas in a letter, titled “Things are serious” (“Σοβαρά τα πράγματα”), which was about the rise and fall in popularity of Darwinism (Xenopoulos, 1923a:116). This is an important letter where he gives a historical perspective on Darwinism at the time. There is a deliberate negative tone, where he appears not only to distance himself from Darwinism but also to make a point of his detachment from the sciences. According to his letter, the fall in popularity is due to the gaps in the theory, such as the lack of evidence regarding the “missing link” in human evolution. Despite his recognition that the theory has some acceptable features, in the following passage taken from the letter, he writes:

As υποθέσουμε πως η αληθινή Επιστήμη πιστεύει ακόμα και διδάσκει πως τα είδη έγειναν τον ένα από τον άλλο και πως ο άνθρωπος κατάγεται από τον πίθηκο. Πρέπει να συμπεράνουμε πως ο κόσμος είναι “τυχαίος” και πως δεν υπάρχει Δημιουργός, Θεός, που τον έκαμε με θέληση και σκοπό; Κάθε άλλο! Εγώ τουλάχιστο, και τον καιρό ακόμα που επίστευα σαν αξίωμα τη θεωρία της Εξέλιξης — τα πάντα από ένα — ούτε
Let us suppose that true Science still believes and teaches that the species were made the one from the other and that man descended from the ape. Should we conclude that the universe is "by chance", and that there is no Creator God who made it with purpose and design? Far from it! Even the time when I still believed the theory of Evolution as an axiom, that is, everything from one, I, at least, did not for one second stop believing, admiring and glorifying the Creator of this universe (my translation).

Further to this, he asserts that there are misconceptions of Darwin's theory which arise from hearing things second hand. So he stresses the importance of reading Darwin's books in order to be properly informed (116). A week later, Xenopoulos writes a follow up letter titled "Science and God" ("Η επιστήμη κι ο Θεός") (Xenopoulos, 1923b:124). He specifically draws attention to what he calls Darwin's epilogue in the *Origin* to substantiate his view of the coexistence of evolution and God. Another issue arises. Xenopoulos' readers' fear of the non-existence of God is revealed in this passage from the letter:

Πρέπει να ξέρετε ακόμα — για να μη φοβάστε πλέον στο μέλλον — πως την ύπαρξη του Θεού την αρνήθηκαν, από τους επιστήμονες, μόνο μερικοί Γερμανοί του περασμένου αιώνα, οι υλιστές [...] Σήμερα, οι αληθινοί επιστήμονες τον Θεό πιστεύουν (Xenopoulos, 1923b:124).

You should also know, so that you will not be afraid in the future any more, that of the scientists only a few Germans of the past century, the materialists, denied the existence of God [...] Today, true scientists believe in God (my translation).

Overall, his attitude to Darwinism appears to be more positive than that of the previous week. In addition, he takes an anti-creationist stance on the time taken for the creation of humanity; he opposes the literal version of the Bible's Creation story which stated that the period of time for the creation was six days (124). These last two letters send an ambiguous message to his readers. On the one hand he plays down Darwin's theory and on the other hand he still pursues it by suggesting to his readers that they should read it for themselves.

The issue of creationism is now highly topical in the United States, the United Kingdom and Australia and has resurfaced in the form of Intelligent Design (ID). Supporters of ID assert that some or all features of living things are best explained as the work of a designer rather than as the result of a random process like natural selection.6 Xenopoulos appears to take on the attitude close to that held by supporters of ID. However I do not believe that he actually held that view. Instead he is actually taking the same approach as Darwin, who in his last pages of the *Origin* includes a creator in his process of evolution:

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6 They may use the language of science to validate their views and may or may not accept that creation arose from a single or few living things.
Authors of the highest eminence seem to be fully satisfied with the view that each species has been independently created. To my mind it accords better with what we know of the laws impressed on matter by the Creator, that the production and extinction of the past and present inhabitants of the world should have been due to secondary courses [...] When I view all beings not as special creations, but as lineal descendents of some few beings which lived long before the first bed of the Silurian system was deposited, they seem to me to become ennobled (458).

There is grandeur in this view of life, with its several powers, having been originally breathed into a few forms or into one; [...] from so simple a beginning endless forms most beautiful and most wonderful have been, and are being evolved (459–60).

As mentioned earlier Xenopoulos refers to what he calls Darwin’s epilogue in the Origin and comes to a conclusion similar to Darwin’s. Darwin felt pressured to include a creator or higher power in the last pages of his book to avoid major criticism from the Church.

The following letter is out of step with the conservative tone of Xenopoulos’ other “Athenian Letters” on science and religion. It is titled “The trial of ... Darwin” (“Η δίκη του ... Δαρβίνου”) in 1925 (Xenopoulos, 1925:292). It reflects that Xenopoulos was still very interested in issues associated with Darwin, despite the suggestion of the opposite in earlier letters. In the letter, Xenopoulos discusses his views on the famous and much publicised Scopes trial of 13 March 1925. The state of Tennessee in the US had passed an anti-evolution bill. It stated that any teacher at a school or university, who taught that man evolved from lower animals or who did not teach that man was created by God, was now liable for prosecution. A science teacher, John Thomas Scopes of the Rhea high school in Dayton, Tennessee, admitted to violating the law when teaching biology and so was tried over several months. He was convicted and fined one hundred dollars.

In his “Athenian Letter”, Xenopoulos ponders the two laws which he believed clashed, that is, the law forbidding the teaching of Darwin’s theory and the law that he interpreted as “not to hinder anyone from exercising their profession”. Xenopoulos wrote that the essence of the case was one of civil liberties. He rationalised the situation by saying that science cannot be aligned with religion; that science demonstrates its ideas experimentally, whereas religion works through the revelation of God. Xenopoulos sends a final double message regarding religion and science, although given the times, a rather bold message to the Church: that is, that neither should religion intimidate science nor should science intimidate religion. On the one hand, he maintains a harmonious coexistence between God the creator and Darwin’s theory, yet on the other hand, he assumes that religion and science are totally unassociated, and should be treated as separate entities (see also Malafantis, 1995:219, 240).

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7 Malafantis also deals with this letter and notes that Xenopoulos’ stance on this was daring, given that it was published during the Metaxa dictatorship (Malafantis, 1995:219, 240).
Interestingly, Xenopoulos’ interpretation of the case was slightly different to what actually eventuated. The outcome of the case was: the judge ruled that the civil liberties component and the validity of the doctrine of Darwinism were not to be tested. According to the judge, the only issue to be dealt with was whether or not Scopes had taught Darwinism, which he had. The enormous publicity by the urban press only managed to expose the anti-evolutionists and religious rural society to international ridicule with the evolutionists looking like the winners even though Scopes was found guilty. Therefore, the trial became not a test of freedom of speech, but a display of the battle between science and religion.

The international publicity that the Scopes trial attracted and its acknowledgement by Xenopoulos in his Athenian letter reveals that it was considered an important issue in Greece at that time. The debate of eighty years ago in relation to teaching Darwinism has re-emerged in the controversy between Darwinism and ID, and their teaching in schools.8

In 1939, Xenopoulos wrote a letter titled, “Darwin’s theory” (“Η θεωρία του Δαρβίνου”), celebrating the one hundred and thirty years from Darwin’s birth (Xenopoulos, 1939:139). He acknowledges that palaeontologists still had not found evidence of the missing link between apes and humans, but he does mention that there was fossil proof exhibiting the evolution of lower forms. The letter, however, differs from the previous letters because, despite the alleged gaps, he exhibits an overwhelmingly supportive stance for Darwinism, proclaiming it to be the grandest and most enterprising of scientific theories. It is only in this letter of 1939, well into the twentieth century, that he writes wholeheartedly to the young readers of the children’s magazine on Darwinian evolution. He portrays Darwinism as a ubiquitous phenomenon which has changed the way that mankind thinks.

Xenopoulos’ thoughts on evolution and the sciences changed over the decades. Certainly with new knowledge his views adjusted, but it appears that on occasions the ideas he displayed in these letters did not always coincide with those found in his more frank autobiography and in other sources. His autobiography indicates he was a positivist, who in essence should have rejected metaphysical assertions till proven with observable facts and their laws. Dealing with the controversial nature of Darwinism and religion in such a conservative magazine as The Children’s Guidance was probably a major factor in his inconsistencies and his overt displays of devoutness.

These letters only reflect how Xenopoulos wanted Darwinism to be received by his readers. Due to the conservative nature of the periodical magazine and its

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8 It should be noted that in Greece even today the teaching of Darwinian theory in secondary schools appears to be often omitted. There are currently submissions by academics to the Ministry of Education and Religion (one department) to reinforce its teaching. There are a number of newspaper articles which are following the progress of this issue. See for example: (Βήμα [Vima], 20 August 2006:A24, Nota Trigka).
audience, predominantly Greek youth, it is unlikely that Xenopoulos would promote his actual beliefs if they were radical. However, these letters are a reflection of the issues concerning Darwinism versus religion which were circulating at the time they were written.

Xenopoulos’ use of gradual development and evolution

In 1902 Xenopoulos wrote a tribute, as an “Athenian Letter”, for the hellenised botanist Theodor von Heldreich (1822–1902) (Xenopoulos, 1902:283–84). He wrote praising the man and the scientist. It was well known Heldreich was a fervent supporter of Darwin’s theories and that he had written to Darwin on a number of occasions, expressing his support. On one such occasion, Heldreich had indicated that, at the time (1878), few Greeks had the courage to show their support for Darwinism because of the “reign of dogmatism” (Krimbas, 1984:344). The tribute reflects Xenopoulos’ positive association with members of the scientific community and in particular with those who were strong supporters of Darwin.

An excerpt from this tribute also presents a style of thought which Xenopoulos used in many of his “Athenian letters” and also in his novels.9 In the spirit of post-Darwinan writing, Xenopoulos made reference to Heldreich’s character using evolutionary concepts, normally used on a biological level, to explain a mental evolution:

It is observed — I have taken the opportunity to tell you on another occasion — that gardeners, florists, botanists and, in general, those who deal with flowers and who love them, become little by little more placid than other individuals. The fine nature of Heldreich had yielded to this influence of plants and flowers. Heldreich who, it is true, would have been a perfect individual in whatever science he took up, became still more perfect because he took up Botany (my translation).

Not only does he make a point of this observation, but he also highlights that he has mentioned it before. He observes changes in the character of those persons who are drawn to vocations affiliated to botany. According to Xenopoulos, these gradual changes, where these people are slowly developing a gentler nature, as compared to those outside botany, are due to the specific conditions of the environment. This

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9 The style of writing, using evolutionary ideas, is a theme which I have explored in my doctoral thesis in a number of Xenopoulos’ “Athenian Letters” and novels.
reaction to the environment which is gradual indicates that he is alluding to a form of adaptive evolution.

The concept of gradualness was a critical prerequisite for modern evolutionary thinking, specifically Darwinism. Darwin stated in the *Origin* (236): “Natura non facit saltum” (Nature takes no leaps). It should be noted that the theory of gradual development (gradualness or gradualism), in terms of evolution, was not new to Darwin as it had been taken up earlier by Lamarck and later also by Herbert Spencer.10

It was not unusual for literary writers of the late nineteenth and early twentieth centuries to use aspects of evolution, such as gradualness, to describe changes in the human condition, within the life-cycle of an individual; this was displayed as either a literary motif or a theme.11 Literary commentators have not explored the use of the theory of gradual development in modern Greek literature.12 For instance, the Greek writer Andreas Karkavitsas also used the concept of gradualness and other evolutionary ideas in his novel *Η λυγερή* (*The Fair Maid*, 1890: 155).13 Incidentally, transformation or metamorphosis of a non-Darwinian type, such as Ovidian metamorphosis, is not characterised by a gradual nature (small steps or degrees).14 In the cited passage above on Heldreich, Xenopoulos does not indicate the mechanism of the influence, whether it is adaptation due to willful (Lamarckian influence) or to random natural selection. It is more than likely

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10 One can go as far back as the philosopher Gottfried Wilhelm Leibniz (1646–1717) who also pronounced the concept of gradualness in nature (Mayr, 1982:325).

11 Gillian Beer’s study of Charles Kingsley’s novel *The Water Babies* (1863) is a fine example of Darwinian analysis dealing with the transformation of individuals within the life-cycle of an individual (Beer, [1983] 2000:116–30). Emile Zola, on the topic of social environments in his naturalist “experimental novels” states: “Here it would be necessary [...] to consider Darwin's theories”. He goes on to say that the novelist needs “to show man living in the social milieu which he himself has produced, which he modifies every day, and in the midst of which he in his turn undergoes continuous modification” (Zola, [1880] 1963:173–74).

12 In his essay, Michel Delon discusses in detail the many applications of the concept of gradualness, including in French literature, during the Enlightenment period (Delon, 2003).

13 Darwinian gradualism is displayed in Karkavitsas’ novel in the passage describing the protagonist’s transformation due to adaptation: “Η Φύσις, η παντοδύναμη θεά, [...] μικρόν κατά μικρόν παρήλλαξε το σώμα και [...] ψυχήν της Ανθής” (Nature, the all powerful goddess, [...] little by little changed Anthis’ body and [...] soul) (155). To clarify how this works, in the same passage Karkavitsas draws an analogy to plants “Έτσι και εις το φυτά τυν τροπικών, τα οποία μεταφυτεύουν εις το ψύχη του Βορρά, χαρίζει νέας δυνάμεις, στερεοποιεί τας ρίζας των, ανδρίζει τους χυμούς και μικρόν κατά μικρόν μεταβάλλει και αυτό το είδος των, διά να δυνηθούν και ζήσουν εις την νέαν πατρίδα των” (Like the tropical plants, which transplant during the cold of the North wind, [Nature] endows them with new powers, fixes their roots, encourages the juices and little by little transforms that species, so that they [the plants] can be strong enough and live in their new country) (my translation).

14 Geologist Charles Lyell argued that geological formations were formed not over thousands of years but over millions. Darwin extrapolated that man's evolution must also have been over such a time, reflecting evolution as gradual and slow.

it would have been considered as Darwinian at the time, but embracing some Lamarckian thought. The development of physical and mental attributes in mankind, according to Darwin in the Descent, appeared to be attributed to natural selection with some contribution by the inheritance of an acquired habit. An example of this style of writing in the Descent is:

Man has risen, though by slow and interrupted steps, from a lowly condition to the highest standard as yet attained by him in knowledge, morals, and religion (Darwin [1871] 1981, 1:184).

Xenopoulos mentions Heldreich changing from a “less perfect” to a “more perfect” state, which is a key feature interpreted from Darwin’s writings. When Xenopoulos refers to small variations or modifications in form going from imperfect to perfect, he is referring to Darwin’s process of natural selection. In the Origin Darwin states:

This preservation of favourable variations and the rejection of injurious variations, I call Natural Selection [...] Every slight modification, which in the course of ages chanced to arise, and which in any way favoured the individuals of any of the species, by better adapting them to their altered conditions, would tend to be preserved; and natural selection would thus have free scope for the work of improvement (Darwin [1859] 1985:131).

Further to this, Darwin indicates that: “as natural selection works solely by and for the good of each being, all corporeal and mental endowments will tend to progress towards perfection” (459).

In evolutionary terms the concepts of progress and perfection were highly controversial and often misunderstood in the scientific world, particularly post-Origin. The effects of this flowed to the literary world. Darwin’s world is one where evolution is based on random variation, and natural selection can produce progressive or regressive evolution or even result in extinction; and the evolution is not

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15 This view of adaptation is found in Darwin’s Descent (Darwin, [1871] 1981, 1:118). See Chapter 4 on “Manner of development” where, for example, Darwin talks of the developed short-sightedness of watchmakers and the long-sightedness of sailors and also savages.

16 Even in his first edition of the Origin, Darwin used some aspects of Lamarck’s theory of the inheritance of acquired characteristics through their use and disuse (Darwin, [1859] 1985:459). Due to growing pressure by pro-Lamarckians Darwin weakened his argument with further additions of Lamarckism in his later editions of the Origin. By the time Darwin wrote the Descent, it was clear that he attributed certain facets of evolution not only to the primary mechanism, that is natural selection, but also to “natural selection, aided by inherited habit” (Darwin [1871] 1981, 1:162). As indicated by editor John Burrow in the Origin, with Lamarck’s theory now not substantiated by science, Darwin’s first edition “brings us closer to the mental climate and state of knowledge in which Darwin’s theory was first conceived and throws his achievements into sharper relief” (Darwin, [1859] 1985:49). So Lamarckian elements in Darwin’s later writing were often embraced by creative writers and considered Darwinian. It is only where the clear mention of conscious effort or intention is made that the writing could be considered as exclusively Lamarckian.
teleological. The world for evolutionary philosopher Herbert Spencer was Lamarckian and finalistic, that is, with an intrinsic drive to perfection.\textsuperscript{17} Although Darwin was reluctant to describe evolution in terms of progress to perfection and of low complexity to high, it is suggested that he did so in order to refute theories where species were considered to be constant and also to refute theories which denied “any difference in perfection between the simplest and the most complex organisms” (Mayr, 1982:531). Mayr further develops this latter point by saying that such theories claimed “there is no structural advance from the lowest organisms, the infusorians, to the highest, the vertebrates. All of them have the necessary structures to perform all animal functions. All are ‘perfect’”. Mayr goes on to say that such theories do not take into consideration the “tremendous advance from the diffuse nerve fiber of a coelenterate to the magnificently evolved central nervous system of a cetacean or primate” (531).

It is worth noting that the passage cited in this paper from one of the “Athenian Letters” (Xenopoulos, 1914:167) also refers to evolution as occurring by degrees (“βαθμηδόν”). Here Xenopoulos uses it in its original biological sense when referring to Darwin’s theory of evolution. Xenopoulos’ use of evolutionary gradualness implies a belief that the highest living form could only have been reached from the lowest living form through many small intermediary stages, which could only have occurred over millions of years. This further confirms Xenopoulos’ anti-creationist views against the biblical version of Creation which maintained the appearance of immutable individual perfect species in a more modest period of time.

**Conclusion**

In an introductory manner, this paper primarily exemplifies Xenopoulos’ intellectual nature, in particular, his strong interest in Darwinism and its impact on science, religion and literature.

Consequently, my research on Xenopoulos and Darwinism has confirmed that Xenopoulos has tended not to be taken very seriously by literary historians and commentators, as is often the case with very prolific writers. With Xenopoulos’ work there has tended to be a lack of study, rather than a lack of his work to study. The broad spectrum of his work, from his novels and plays to his children’s magazine, has spanned over fifty years. His work has contributed immensely to the more serious type of literature and also to popular culture; it has been a channel

\textsuperscript{17} Spencer saw evolution as “a necessary progression toward higher level and higher complexity”, unlike Darwin. Confusion between Darwinism and Spencerism was very common. Spencerism was aligned with popular misconceptions which infiltrated into areas such as literature (especially in America). Spencer’s theory was based on metaphysical assertions whereas Darwin’s was based on observational evidence. So although Xenopoulos had been a Spencerian early in his life, by the time he wrote most of his “Athenian Letters” and novels, he knew that Spencer’s theories were outdated.
reaching a large proportion of the Greek population in one way or another. Hence, his work has been very influential in shaping Greek society, and it requires further investigation.

Concurrently, with the introduction of a Darwinian perspective to Xenopoulos’ work there is a need for further research in reassessing his status in literature. Finally, the research associated with this paper has revealed a serious gap in the literary scholarship of Darwinian thought in other modern Greek writers, which needs to be explored.

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