

Opinion Page. The Politics and Philosophy of a New Theoretical Framework in Evolution Education

ÖZGÜR TAŞKIN, Education,
Ondokuzmayıs University, Türkiye.



Taşkın earned his BSc and MSc degrees from the Soil Sciences Department and was a research and teaching assistant at Ankara University. His thesis was about biological activities in soil. He spent a year on PhD courses in the same area. He completed his PhD at the Science and Environmental Education Department at Indiana University in 2004. Taşkın's interest areas are environmental and evolution education and argumentation on the nature of science. Taşkın is an Associate Professor in the Faculty of Education, Ondokuzmayıs University, Türkiye.

All serious scientific papers state that the foundations of biology are based on the theory of evolution and, further, the difficulties of teaching evolution are routinely noted. Although the nature of science (NOS) is emphasized as something to be learnt in evolution pedagogy, epistemology is ignored. Likewise, the

influence of politics and commercial interests in evolution education is oft ignored by researchers. This influence is marked in contemporary Türkiye.

Critics of Evolutionary Theory

A Turkish case concerning Adnan Oktar or Harun Yahya, who is known for his anti-evolution work, has been progressing for five years. News about the case has been reported in the Turkish press, as well as in Israeli and British media outlets such as *The Jerusalem Post*, *Haaretz* and *The Guardian*. Although some of the accusations against Oktar and his team include the misuse of religious beliefs and personal data, there is not a single mention of Oktar's anti-evolution work in the public discussion.

In the book titled *The Gülen Movement in Turkey* (Tee 2016), Caroline Tee brought together Fethullah Gülen's interest and views on science. Her book is supported by the [John Templeton Foundation](#).

According to Gülen, science should not be atheistic and secular but compatible with religion. Gülen's perspective on science can be seen in the foreword he wrote to the book *The Creation and Evolution Debate in 110 Questions: The story of an endless ideological fight*. The book was written by İrfan Yılmaz, a well-known creationist, who has similar works to Adnan Oktar. The book provides a very contested account of the nature of science and how science is demarcated from non-science. Account not shared by most philosophers.

Some of the visible and organized attacks that have worked for decades to disrupt the teaching of evolution are available in the literature ([Harun Yahya](#), the [Institute for Creation Research](#), and others.). From the 1960s to the 1990s, opponents of evolution presented their arguments under different names: *Creation Science*, *Creation Theory*; *Intelligent Design*, *Theory of Intelligent Design*, and *Biological Design Theory*.

Anti-evolutionary documents were prepared in a very conscious, organized, and financially supported manner (e.g. [Atlas of Creation](#), 3 Volumes by Harun Yahya).

Constructivism in Evolution Education

From the early 1990s to the present day, *constructivism* has been both epistemologically and pedagogically the most dominant philosophy, theory and approach informing science education (Matthews, 2021). Constructivists have been significantly influenced by Thomas Kuhn, who severed the realist referential link between science and reality, hence bringing a whole new understanding of the nature of science into science education (Matthews, 2024). Significantly, Kuhn later regretted his self-described "excessive plasticity" statements about "paradigm" (1977, pp. 293-294). His regrets, and second thoughts, went largely unnoticed by constructivists.

The common explanatory theories used in evolution education research are based on different paradigms called *conceptual change*, *conceptual ecology* or *traditional conceptual ecology*. They all have an epistemological and pedagogical affinity with constructivism, even if the names change. Most of these structures, sometimes called *lenses*, sometimes *paradigms* or *theoretical frameworks*, are utilized as explanations of student learning of evolution.

The ReCCEE Framework

The Barnes and Brownell School (B&T 2016, 2017, 2020) started to use a theoretical framework called the *Religious Cultural Competence in Evolutionary Education* (ReCCEE), which is claimed to be explanatory. Although ReCCEE is derived from the theory called *Cultural Competence*, and its source is constructivism (Cross et al., 2020; Garneau

& Pepin, 2015), it is noteworthy that Barnes and Brownell do not mention constructivism in their paper. ReCCEE focuses on being sensitive to the religious knowledge and feelings of the student. Barnes and Brownell make the following claims, arguments and suggestions for evolution education.

- 1- Biology teachers in the USA teach evolution in an atheistic form, so the ReCCEE should be preferred.
- 2- Religious scientists should be invited to schools as role models.
- 3- Secular teachers should pay attention to the religious sensitivities of students.
- 4- With the ReCCEE, disadvantaged groups, including LGBTQIA individuals, can learn evolution in a more inclusive environment when it has an agnostic or theistic form.
- 5- The statements of authority figures in the field support the above suggestions.

Barnes and Brownell's pedagogical claims apply to both Christian and Muslim students. The theoretical framework of the ReCCEE has become so popular that not only in the US but also in Israel and Taiwan, academic studies in evolution education have started to use the ReCCEE (Chen, Lin, & Chang, 2024; Stahi-Hitin, R., & Yarden, A., 2022). Although we leave aside the inconsistencies of these claims and proposals for a moment, there are invisible attacks on evolution education from within the system, as Haarscher describes them. These are in addition to the visible and organized attacks mentioned at the beginning of this essay.

Playing with Liberal Values in Evolution Education

The invisible attacks are those who try to disrupt the individual's reasoning and interpretive process by pretending to accept evolution. Haarscher maintains:

"If the listener is naive or uninformed, he or she may take sides in the debate and defend these positions, even if they fundamentally contradict liberal-democratic values, because they are being discussed from within the system ..." (2009, p. 362).

Haarscher gives examples of the language chosen by those who use efforts to enter or appear to enter the system: "tolerance, freedom of scientific research and teaching, open-mindedness, acceptance of contradictory ideas, discussion about epistemology" (2009, p. 365).

Based on Haarscher's account, there are questions to be asked about the claims of Barnes and Brownell (2017).

- 1- How do biology teachers in the USA teach atheistic evolution? Is the aim of bringing the religious scientist type to schools really inclusive education, or is it to prioritize the sensitivity of a particular religious group?
- 2- Although secularism and atheism are different terms, why do Barnes and Brownell use these two terms as synonyms in their articles? Also, what could be their purpose in going beyond the dictionary meaning of secularism and creating the perception that there is hard secularism in the US? When defining secular culture, Barnes and Brownell prefer the expression "overtly opposed to religion". However, there is not a single negative statement about religious groups and their organized attacks in their articles.
- 3- Even if the term 'anti-secular' is not used, how can the classroom environment provide a more inclusive education for LGBTQIA individuals with a warning to secular teachers? Di Marco, Hichy, and Sciacca's (2020) research shows that LGBTQIA individuals live most safely in secular

countries. How can LGBTQIA individuals learn biology more quickly in an anti-secular environment?

In their article, Barnes and Brownell refer to a speech by Stephen Jay Gould¹. However, Gould emphasized in his speech that Evangelical parents oppress biology teachers in America. Incidentally, Gould was an atheist (de Waal, 2013, p.109), regardless of Barnes and Brownell declaring him an agnostic. Although Gould said that science and religion can be reconciled, the theoretical framework for this is his *Non-overlapping Magisteria* (NOMA) doctrine (Gould, 1997). For Gould, religion and science do not address the same issues; they travel in different wagons. However, Barnes and Brownell present Gould without NOMA.

Obscurantism

Haarscher emphasizes that creationists refer to Darwinism as a "secular religious doctrine" (Haarscher 2009, p.367) and that they attempt to use liberal values to distort the process of reasoning and interpretation. Philosophy articles describe the situation differently, with some describing it as 'obscurantist' (Matthews, 2023; 2021, p.259). In Bien's (2021) definition, the approach used by Barnes and Brownell is basically 'obstructive' and 'cryptic and systematic nonsense'. According to Buekens and Boudry (2015), some authors do not hesitate to create ambiguity and systematically offer inconsistent and disconnected proposals. These adjectives rightly describe the articles of the Barnes and Brownell school.

Conclusion

1

<https://www.youtube.com/watch?v=DRB19MYxaUs> (Lecture from March of 2000, at the annual meeting of the American Institute of Biological Sciences in the Museum of Natural History, Smithsonian Institution, Washington DC.)

The similarity of Barnes and Brownell's proposals for anti-secular, religiously compliant, and non-atheistic science teaching with Gülen's is apparent. Comparably, Tee (2016) devotes a chapter of her three-part book to Gülen's perception of science. Gülen has clearly shown this perception in his above-mentioned foreword to creationist İrfan Yılmaz's book *The Creation and Evolution Debate in 110 Questions: The story of an endless ideological fight*.

In any case, an epistemologically idealist, pedagogically anti-atheist and anti-secular evolution education format is being promulgated in the US and many other countries. It is on its way to becoming the new orthodoxy in evolution education. Readers might consider why this is the case: Is it the strength of argument or the strength of political and commercial support?

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