

# John Tyndall: How a lecture in Belfast 150 years ago supercharged the modern debate on consciousness

August 17 2024, by Diarmid Finnegan

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Ulster Hall in 1890—second building from the left. Credit: National Library of Ireland on The Commons

On 19 August 1874, the Irish physicist John Tyndall—now better known as the co-founder of climate science—spoke to 2,000 people for nearly two hours in Belfast's Ulster Hall. What [he said](#) generated one of the most intense controversies about science and religion in the modern period. The aftermath is still felt today.

Tyndall's three core arguments threatened strongly held [religious convictions](#). The first was that science alone was competent to speak about the material world. The second was that the physical universe contained the "promise and potency" of life, consciousness and reason. The third was that religious believers had no grounds for claiming definite knowledge of the unfathomable mystery at the heart of existence.

The strain between Tyndall's vision of science and religion and that of many of his Victorian contemporaries had been building for decades. His high-profile lecture was designed to increase the pressure to breaking point.

Charles Darwin's theory of evolution provided Tyndall with a powerful resource to pursue that goal. To Tyndall, Darwin offered a compelling natural explanation for the diversity of life on Earth and made the idea of divine interference obsolete. If Darwin held back from making confident assertions about life's beginning, Tyndall exercised no such caution. There was, Tyndall declared, no point in the history of the cosmos when "creative acts" of a "deity" were required.

This included the emergence of two remarkable phenomena: [human cognition](#) and consciousness. Tyndall fully recognized [what has since been termed](#) "the hard problem" of consciousness: how subjective experience is derived from non-conscious matter. But he was convinced that knowledge of the gradual evolution of cognition, a more advanced science of the brain and a redefinition of matter would provide a natural explanation of the human mind.

Reactions to Tyndall's explosive lecture appeared immediately and continued long afterwards. While his Belfast audience politely applauded, the physicist [Oliver Lodge](#) recalled the atmosphere growing "more and more sulfurous." Editorials in the press the following morning

raised the alarm, and, within days, [newspapers nationwide](#) ran articles and letters attacking the physicist's misguided materialism (the theory that physical matter is all that exists).

The backlash ramped up in the weeks that followed. On the Sunday after the lecture, Belfast's pulpits, as Tyndall put it, "thundered at" him. At the end of October, the Bishops of the Catholic Church in Ireland [published a letter](#) half as long as Tyndall's address, condemning his materialist metaphysics. Around the same time, a Belfast-based lecture series to combat Tyndall's philosophy of mind and nature was arranged by prominent Presbyterians.

Over the next few years, numerous articles, pamphlets and books dissecting Tyndall's lecture were published. Many, if not most, accused Tyndall of abusing his prominent position to endorse an irresponsible materialism that undermined morality and the Christian religion.

Publicly, Tyndall's [response to accusations of atheism](#) and crude materialism was to strenuously deny he advocated either. Contrary to what his critics thought, he did not dismiss "the facts of religious feeling." Instead, he regarded them as "certain as the facts of physics." What he objected to was translating subjective religious inclinations into fixed theological beliefs. Dogmatic religion, he argued, was the enemy of science and of a better future.

Privately, his reaction was more volatile. As his correspondence from 1874, [now published](#), shows, one attack made him consider legal action. In fact, he only abandoned this approach when he was advised it was unlikely to succeed.

## Ongoing debate

A century and a half later, Tyndall's main claims are more widely

accepted in the places where they were once strongly contested. Religion, understood in Tyndall's terms, remains a significant, if more private, part of people's lives. But his allergy to religious certainty is now commonplace.

His arguments, however, continue to be contested. If his philosophy of science and his understanding of religion command widespread support, they nevertheless [have serious detractors](#). His account of the development of science, already skewered in 1874 by astute critics such as the religious scholar [William Robertson Smith](#), no longer has the support of professional historians.

Beyond its chronological muddles and anachronistic portrayals of various philosophical schools, Tyndall's emphasis on the importance of singular "men of exceptional power" in moving science forward [is no longer considered tenable](#). His narrative of dogmatic religion everywhere impeding scientific advance has also been subject to [sustained criticism](#).

The scientific racism that helped prop up Tyndall's explanation of the origins and evolution of the human mind (to buttress claims that the human mind had evolved, Tyndall cited supposed differences in brain size between contemporary "savages" and Europeans) has also been [thoroughly discredited](#), though, worryingly, [not entirely extinguished](#).

On other matters, such as the origin of life, [scientific research](#) has made significant progress, though questions clearly remain. Tyndall's support of something like "panpsychism"—the idea that consciousness is already built into matter—[has recently been revived](#), even if it remains [a minority view](#) among consciousness researchers.

Whatever its strengths and weaknesses, Tyndall's Belfast address dramatically shifted the fault lines between science and religion in ways that continue to shape how we talk about them today. More particularly,

the broadly materialist explanation of mind and consciousness that Tyndall espoused continues to provoke heated debate.

If you have a couple of hours to spare, Tyndall's infamous lecture is certainly [worth a read](#).

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