

Evolutionary biologists have analyzed political opposition to evolution and found it has evolved

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A photograph of teachers at a workshop learn tips for teaching evolution. A new study reveals strategies used in state lawmaking to influence the teaching of evolution in public schools. Credit: NIMBioS

Organized opposition to the teaching of evolution in public schools in the United States began in the 1920s, leading to the famous Scopes Monkey trial. It continues today, but has evolved significantly from the outright bans.

In a new study from the National Institute for Mathematical and Biological Synthesis (NIMBioS), the evolutionary history of antievolution efforts in state legislatures is statistically reconstructed in a [phylogenetic tree](#) to reveal the genealogical relationships among lawmaking efforts over the past decade.

The study sheds light on the strategies used by creationists to influence the way biology is taught in the classroom.

While US courts have consistently ruled that teaching explicitly religious alternatives to evolution, such as creation science or intelligent design, violates the US Constitution, creationists have continued to fight legal and political battles to undermine the teaching of evolution.

The study, published today in the journal *Science*, shows the detailed 'family relationships' of antievolution legislation in the US from 2004 to the present. The phylogenetic analysis tracks the copying and modification of the text of the legislative proposals over the last ten years, which total 65 bills.

In 2004, antievolutionist legislation began to shift tactics due to likely challenges to the constitutionality of 'intelligent design.' In the 2005 *Kitzmiller v. Dover* decision, a federal court held that teaching [intelligent design](#) in the [public schools](#) was unconstitutional, and afterwards, policies encouraging 'critical analyses' of evolution and other topics became dominant.

The study shows the origin of this now-common tactic of urging a critical approach in antievolutionist language in the bills.

"The strategy of encouraging 'critical analysis' of not just evolution and origin-of-life studies, but also of human cloning and global warming was essentially invented in a 2006 school board policy passed in Ouachita Parish, Louisiana. This combination proved popular, and legislative bills using this tactic have since been proposed in many states, and were passed in Louisiana and Tennessee," explained lead author Nick Matzke, a former NIMBioS postdoctoral fellow and now a fellow at the Australian National University.

The study also found that antievolution bills show evidence of 'descent with modification,' suggesting that anti-evolutionist legislators copy bills recently proposed or passed, rather than writing new bills from scratch. In addition, although the antievolution bills usually avoid mentioning creationism, most could be tied directly to creationism through statements in the legislation or by the bills' sponsors.

"Creationism is getting stealthier in the wake of legal defeats, but techniques from the study of evolution reveal how creationist legislation evolves," Matzke said.

More information: "The evolution of antievolution policies after Kitzmiller v. Dover ," www.sciencemag.org/lookup/doi/10.1126/science.aad4057

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