

[Evolution, Creationism, and the Battle to Control America's Classrooms](#)
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EVOLUTION, CREATIONISM, AND THE BATTLE TO CONTROL AMERICA'S CLASSROOMS

Who should decide what children are taught in school? This question lies at the heart of the evolution–creation wars that have become a regular feature of the U.S. political landscape. Michael Berkman and Eric Plutzer show that, since the 1925 *Scopes* “monkey trial,” many have argued that the people should decide by majority rule and through political institutions; others variously point to the federal courts, educational experts, or scientists as the ideal arbiters. Berkman and Plutzer illuminate who *really* controls the nation’s classrooms. Based on their innovative survey of 926 high school biology teachers, they show that the real power often lies with individual educators who make critical decisions in their own classrooms. Broad teacher discretion sometimes leads to excellent instruction in evolution. But the authors also find evidence of strong creationist tendencies in America’s public high schools and, more generally, a systematic undermining of science and the scientific method in many classrooms.

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2 The Public Speaks: “Teach Both”

The people, as a rule, do not believe in the ape theory.

William Jennings Bryan (1924)¹

Understanding how the Gallup poll induced such opinions about the creationism issue in this case provides an object lesson as to how an illusion of public opinion can be generated in public opinion surveys generally.

George Bishop (2005)

But we decide which is right.

And which is an illusion?

The Moody Blues (1967)

OPPONENTS OF EVOLUTION have claimed for nearly a century that public opinion is on their side. The proponents of the nation’s first anti-evolution laws in the 1920s were confident that these laws would be popular with voters and reflected majority sentiment. In the latter half of the twentieth century, state legislators and school board members could also claim citizen support for policies that mandated “balanced treatment” for evolution and creationism and, later, that mandated the teaching of intelligent design or curricula that emphasized “gaps” in the theory of evolution. As we noted in Chapter 1, both populists like Bryan and strict constructivists like Scalia have made strong normative cases for following the wishes of the majority,

¹ Bryan is quoted in Larson (2003, 46); the second quotation is from Bishop (2004, 158), and the Moody Blues lyrics come from their album *Days of Future Past* (1967).

even against the strong objections of scientific or pedagogical experts. Thus, it is essential to understand the policy preferences of ordinary citizens.

In this chapter, we marshal evidence from more than a quarter century of surveys of the American public concerning evolution. We will begin with the public's *policy preferences* – what Americans say that they want taught in public schools. This review will show that the majority of Americans favor teaching students a biblical perspective on the origins of life on earth. For most, creationism should be taught *alongside* evolutionary biology – what many refer to as “balanced treatment.” However, a fairly sizable minority say they want biblical perspectives to *supplant* scientific treatments of the origin of species.

But can we dignify the results of these polls with the term “public opinion”? *Public opinion* connotes a collective judgment that merits respect in the democratic process. It is entirely possible that what appears to be strong support for teaching creationism is an artifact of the polling process itself. We must ask whether polls showing substantial support for teaching creationism meet the standards of public opinion as an informed collective judgment that policy makers can discern and which they should consider.

To answer this question, we must devote considerable attention to understanding *why* Americans give particular answers to these polls. Could the answers be methodological artifacts created by the pollsters themselves? More specifically, might apparent support for creationism be a result of biased questionnaires and biased question wording? Or might citizens' answers be capricious, thoughtless, and essentially random? Alternatively, can we see a logic and rationale underlying the answers so that we can say – to borrow Page and Shapiro's (1992) term – the public is rational? We will address all of these questions. But first we must see what the public says when asked about evolution and creationism in public schools.

POLICY PREFERENCES

What should children be taught in high school biology classes? That is the policy question that serves as the flash point of the evolution controversy in the United States. A good place to begin is with two surveys conducted in the summer of 2005. The first was a survey

conducted by the Survey and Research Evaluation Laboratory at Virginia Commonwealth University (VCU). Every year since 2001, VCU has conducted a survey devoted to science, science policy, and science ethics (including medical ethics). About midway through the 2005 survey (the 24th question), respondents were asked about their beliefs regarding the origins of biological life and then were asked,

Regardless of what you may personally believe about the origin of biological life, which of the following do you believe should be taught in public schools?

- Evolution only – evolution says that biological life developed over time from simple substances.
- Creationism only – creationism says that biological life was directly created by God in its present form at one point in time.
- Intelligent design only – intelligent design says that biological life is so complex that it required a powerful force or intelligent being to help create it.
- Or some combination of these?

A few months earlier, the commercial firm Harris Interactive conducted a telephone poll in which the first five questions concerned beliefs about *human* origins (e.g., did human beings develop from earlier species, whether apes and man have a common ancestry). For the sixth question, citizens were then asked,

Regardless of what you may personally believe, which of these do you believe should be taught in public schools? Evolution only, creationism only, intelligent design only, or all three.

The results of these two recent surveys are reported in the first two columns of Table 2.1. The results are remarkably similar despite differences in the survey organizations, the length of the survey, the context of previous questions, and the fact that the VCU survey never mentions *human* evolution explicitly. In both surveys, roughly half of the public endorses teaching a *combination* of approaches to human and biological origins. In both surveys, more than 25% of the public would prefer to teach either biblical creationism or intelligent design exclusively. And in both surveys, only 12–15% endorse teaching evolution only. Because teaching *evolution only* was the official policy in all fifty states in 2005, we have strong evidence of a large gap

Table 2.1. Public preferences for teaching evolution and creationism, single-question format, 1981–2005

	Recent polls		Older polls	
	VCU 2005 (%)	Harris 2005 (%)	CCD 1987 (%)	NBC 1981 (%)
Teach creationism only	21	23	11	10
Teach intelligent design only	5	4	–	–
Teach creationism and intelligent design	4	–	–	–
Teach a combination including evolution	43	55	68	76
Teach evolution only	15	12	11	8
Don't know or no answer	12	6	10	6
Total	100%	100%	100%	100%
(N)	(1,002)	(1,000)	(1,708)	(1,598)

Sources: See Appendix 2.

between public opinion and public policy. We will have much more to say about sources of this gap in the next chapter, but we can say that the Supreme Court’s judgment that balanced-treatment laws violate the First Amendment is the major factor preventing policy from conforming to opinion.²

Table 2.1 also shows the results of similar, but not identical, questions asked in two polls in the 1980s (source information and original question wording for all tables in this chapter can be found in Appendix 2). Taken as a whole, the trend data suggest that most Americans would like public schools to “teach the controversy” by providing both sides of the argument. However, the percentage of Americans endorsing this centrist position appears to have fallen sharply as the percentage supporting evolution-only has increased at least 50%, whereas the percentage supporting alternatives has more than doubled. We cannot rule out the possibility that the trends are an

² Some table entries in this chapter may differ slightly from data we previously reported (Plutzer and Berkman 2008) in our comprehensive review of evolution polls. The differences stem from our reliance on published results in the former article. In this chapter, we have based all tables on our own analyses of the original data, which have been generously placed in the public domain by the major polling organizations. Slight differences in the way that sample weights and missing values are handled account for these small differences. All tables in this chapter are based on data that have been weighted to match the population on characteristics such as race, age, and sex. Unweighted analyses are very similar, however, rarely differing by more than a percentage point or two.

Table 2.2. Percentage favoring the teaching of creationism instead of evolution, 1999–2005

Would you generally favor or oppose teaching creation **INSTEAD OF** evolution in public schools?

Survey (date)	Favor (%)	Oppose (%)	Don't know (%)	Total	N
Gallup (1999)	44	50	5	100%	1,016
CBS/NYT (2004)	37	51	12	100%	885
Newsweek (2004)	40	44	16	100%	1,009
Pew (2005)	33	54	13	100%	1,090
Pew (2005)	38	49	13	100%	2,000

Sources: See Appendix 2.

artifact of different question wording or survey design, but these data suggest a substantial increase in polarization as the issue has remained in the public eye. The apparent increase in polarization would be consistent with the stepped up mobilization and education efforts on both sides of the issue during the last twenty years and with polarization on other social issues in the United States (e.g., Layman and Carsey 2002).

Before we accept the conclusion of a massive disconnect between what the public says it wants and the policies it receives, however, we need to pursue public opinion in much greater depth. We will show that the apparent size of the evolution-only constituency depends somewhat on how pollsters ask the questions. After demonstrating this and considering the implications, we offer an extended discussion of whether public opinion concerning evolution and creationism is sufficiently “rational” so as to merit respect in the policy-making process.

Another Way to Ask About Evolution in the Schools

Since 1999, a number of respected polling organizations have asked citizens whether they would “*generally favor or oppose teaching creation instead of evolution in public schools?*” Results from five different surveys are reported in Table 2.2. This question elicits a much larger percentage of Americans in the *creationism-only* camp than we see in the Harris and VCU surveys. On average, about 38% of Americans seem prepared to *replace* scientific discussions of human origins with biblically inspired alternatives.

Table 2.3. Percentage favoring the teaching of creationism along with evolution, 1998–2006

Would you generally favor or oppose teaching creation ALONG WITH evolution in public schools?

Survey (date)	Favor (%)	Oppose (%)	Don't know (%)	Total	N
University of North Carolina (1998)	59.5	33.7	6.7	100%	1,257
Gallup (1999)	68.1	29.0	3.0	100%	1,016
CBS/NYT (2004)	65.3	28.8	5.9	100%	885
Newsweek (2004)	60.2	28.0	11.8	100%	1,009
Pew (2005)	56.9	32.6	10.5	100%	1,090
Pew (2005)	63.6	26.1	10.3	100%	2,000
Pew (2006)	58.2	35.0	6.8	100%	996
Average of seven polls	61.7	30.5	7.9	100%	

Sources: See Appendix 2.

One reason that the percentage of anti-evolutionists is so much higher here may be the limited alternatives. Those uncomfortable with evolution are not given a choice that might reflect a middle ground and may select “instead of” in order to register their ambivalence toward evolution. This would be a reasonable response if the question were asked before other questions about the teaching of evolution.

For this reason, this survey question is usually paired with a second question that asks, “*Would you generally favor or oppose teaching creation along with evolution in public schools?*” The results of this question across several different polls and polling organizations are shown in Table 2.3. This time series shows that roughly two-thirds of Americans endorse equal treatment. As we noted earlier, public opinion pollsters typically pair these questions, and, in most recent polls, the questions are presented in random order, with half of the respondents first being asked about replacing evolution before being asked about teaching creationism along with evolution.³

One way to glean some additional information from these questions is to combine them into a single summary. For surveys that

³ A close inspection of the effects of randomization shows that if the “instead of” question is asked first, support is about 6.5 percentage points higher than if it is asked second (39.1% vs. 32.5% in the 2005 Pew Center Religion and Public Life Poll). We are grateful to Scott Keeter and the Pew Center for providing the randomization file that allowed us to see the effects of question order.

Table 2.4. Public preferences for teaching evolution and creationism based on two-question format, 1999–2005

	Gallup 1999 (%)	CBS 2004 (%)	Newsweek 2004 (%)	Pew 2005 (%)	Pew 2005 (%)
1. Teach creationism or ID* only	41	37	40	34	38
2. Teach creationism for sure (DK “instead”)	2	6	7	4	5
3. Teach a combination	34	31	24	30	31
4. Teach evolution for sure (DK “along with”)	0	1	1	1	1
5. Teach evolution only	21	19	19	22	17
Don’t know or ambiguous response	2	5	9	9	9
Total	100%	100%	100%	100%	100%
(N)	(1,016)	(885)	(1,009)	(1,090)	(2,000)

* ID refers to intelligent design; DK refers to “Don’t know.”

Sources: See Appendix 2.

asked both questions, and for which the original raw data are available, we have created a summary classification with scores ranging from 1 to 5. Respondents who expressed a preference for teaching creationism instead of evolution (regardless of how they answered the other question) are scored a 1, and respondents who support teaching evolution only (answering “oppose” in both questions) are scored a 5. Respondents classified as “teach both” are scored a “3” if they endorsed creationism along with evolution and did not endorse the proposal to replace evolution. Two small categories of citizens who are unsure about one proposal or the other get intermediate scores (“DK” connotes “Don’t know” in the table; see the appendix to this chapter, section A2.3, for an extended explanation of this coding scheme). The summary scores are reported in Table 2.4. As in the case of the Harris and VCU surveys, we again find that less than 25% of the public endorses current public policy and that, if forced to choose, many more would endorse creationism than evolution.

To assess the potential impact of question format, Table 2.5 averages the results of polls using each polling approach and reports them in a comparable way. The results show that the way the question is asked can alter the percentages substantially. In particular, the single-item question used by VCU and Harris may be biased somewhat toward the intermediate position of teaching both approaches – in

Table 2.5. Comparing support for evolution and creationism in the classroom elicited by two different question formats

	Single-question format, 2005 (adapted from Table 2.1)	Two-question format, 1999–2005 (adapted from Table 2.4)
	2 Poll Avg	5 Poll Avg
1. Teach creationism or ID only	27	38
2. Teach creationism for sure (DK “instead”)		5
3. Teach a combination	51	30
4. Teach evolution for sure (DK “along with”)		1
5. Teach evolution only	14	20
Don’t know or ambiguous response	9	7
Total	100%	100%

Sources: See Appendix 2.

part because of recency effects (the option of teaching “a combination” or “all three” is offered last) and in part because reciprocity norms (the willingness to accommodate an opposing view) may be stronger when multiple options are presented at the same time.

However, just because we have evidence of question-format effects does not make the results invalid. In fact, three important conclusions are *strengthened* by examining both sets of polls. During the 1999–2005 period:

1. Over two-thirds of the public endorse teaching creationism (either along with or instead of evolution). Thus, a supermajority expresses opposition to Supreme Court decisions banning this practice.
2. *Every survey* shows that anti-evolutionists outnumber pro-evolutionists.
3. The highest recorded support for teaching evolution and only evolution is 35%, very far from a majority. Most polls show even lower support. We will show in Chapters 4 and 6 that all state standards endorse evolution, although with varying degrees of comprehensiveness and rigor. Therefore, no more than one-third of U.S. citizens endorse the policy that is actually in place in all fifty states.

These three conclusions are critical to understanding evolution politics and policy in the United States. More fundamentally, they describe

a situation in which *the people* appear at first glance to be largely irrelevant to the policy-making process. Across the whole country, we see a mismatch between public opinion and policy. Of course, education is a state and local responsibility. As we move on we will disaggregate public opinion to look at the congruence between opinion and policy in these venues. But first, in the remainder of this chapter, we must subject these three conclusions to additional methodological challenges and place them in broader social and political contexts.

A POLICY-OPINION GAP? OR AN ILLUSION OF PUBLIC OPINION?

If we take the most recent surveys at face value, it appears that only 15–20% of the public endorses the policy of teaching evolutionary biology and excluding both creationism and intelligent design from high school biology classes. But there are two key arguments that suggest we should not take these polls as serious expressions of public preference. First, it might be argued that all of these polls are subject to bias stemming from the way the questions were worded or from other cues provided in the survey interview. Second, it is possible that the public is so poorly informed about the topic that most individuals are answering the question in a thoughtless manner that makes the results something less than “public opinion.” Both of these arguments are advanced by George Bishop in his *Illusion of Public Opinion* (2004), and the latter argument is made by David W. Moore in *The Opinion Makers* (2008). We think these two analyses are sufficiently important that we need to address each point.

Is High Support for Creationism a Methodological Artifact?

The first possibility is that the “real” support for teaching evolutionary biology is actually higher but the survey questionnaires used by polling organizations introduce bias that induces people to give anti-evolution answers. Indeed, we have already provided evidence (in Table 2.5) that question format can alter apparent support for “teaching both” by about twenty percentage points. The impact on support for teaching evolution, however, appears to be no more than five percentage points.