



God and Darwin: The *York Daily Record* and the Intelligent Design Trial

In fall 2004, the school board in the small town of Dover, Pennsylvania voted to require that ninth-grade students be read a statement about gaps in evolutionary theory prior to the evolution section of the curriculum. Students were to be told evolution was just one of several theories explaining the origin and development of life on earth, and to consider alternatives—specifically a theory called “intelligent design,” which posited that an “intelligent agent” was responsible for certain “irreducibly complex” features of some organisms. In response, 11 Dover parents sued the school district. The resulting trial, *Kitzmiller v. Dover Area School District*, was a national news event with the potential to redefine how science would be taught in schools.

But it was also a divisive local issue in Dover, whose school district encompassed a community of 24,000 in a rural southern corner of the state. At a local paper, the *York Daily Record*, education reporter Lauri Lebo struggled with how to cover the trial. Though she had never been a science reporter, she soon learned that there existed virtually no controversy among scientists that evolution by natural selection represented the best explanation of how earth’s species developed. Yet the controversy over teaching evolution in high school biology was what made the subject newsworthy. How could Lebo cover both sides of the controversy in a neutral tone while staying true to the science? Was it best to frame it as a political story, a science story, or a courthouse story—and what did the answer say about how she should write it?

Lebo tried to educate herself as thoroughly as she could about the science behind the debate. By the time the trial began in September 2005, she had become confident in the subject, and ever more convinced that few scientists doubted Darwin’s theory of evolution by natural selection. In fact, as she had found out, the theory was the basis of modern biology. Yet she faced resistance from editors who felt she should present a more balanced picture and devote more coverage to holes in evolutionary theory.

On October 18, Lebo watched in court as the foremost expert on intelligent design fared poorly under cross-examination. The plaintiffs’ attorney had, in Lebo’s view, revealed devastating weaknesses in his theory. She returned to the newsroom that evening to chronicle the day’s events.

This case was written by Kathleen Gilsinan for the Knight Case Studies Initiative, Graduate School of Journalism, Columbia University. The faculty sponsor was Professor Marguerite Holloway. Funding was provided by the John S. and James L. Knight Foundation. (0409)

Copyright © 2009 The Trustees of Columbia University in the City of New York. No part of this publication may be reproduced, revised, translated, stored in a retrieval system, used in a spreadsheet, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise) without the written permission of the Case Studies Initiative.

Lebo carefully considered how she should write her story. During the first week of the trial, the plaintiffs had presented their case that the theory of intelligent design violated the very definition of science and was an illegal attempt to introduce religious instruction into science classes. Decades of court precedent had affirmed evolution's place in public schools and overruled attempts to teach alternatives based on the Bible's account of life's creation. The plaintiffs' attorneys had tried to show that intelligent design was simply the biblical creation story dressed up as science. Lebo had covered their arguments with interest.

Now, however, it was the defense's turn to present its case. Lebo was convinced that the scientific evidence was on evolution's side, but was it her job to judge the legal evidence? In court, each side of a case was supposed to receive an equal chance to speak, and perhaps the same was true of the journalism about that case. But Lebo felt that it was misleading to present a balanced picture of a debate she viewed as lopsided. On the other hand, she knew that editors felt her coverage had leaned too far to the pro-evolution side, and she worried that if she emphasized the defense's poor showing, editors or readers might accuse her of partisanship. In the worst case, an editor might take her off the story altogether. What was a fair way to cover the defense? Should she simply describe the arguments presented that day, as she had during the plaintiffs' portion of the trial? Could she give an accurate picture without picking sides in a cultural battle playing out in her town?

York's newspapers

Dover was a small town in York County, a largely rural, working-class corner of southeast Pennsylvania. The county was unusual for having two local newspapers. Buckner News Alliance's *York Daily Record* was the larger of the two, printed on mornings Monday through Saturday, with a weekday circulation near 47,000. MediaNews owned the *York Dispatch*, which was printed Monday through Friday afternoons, with a smaller weekday circulation slightly over 37,000. The *Dispatch* also published a Sunday paper, the *York Sunday News*. Since 1990, the two papers had been produced under a Joint Operating Agreement (JOA), which allowed two competing papers to share printing, advertising, and distribution resources. In 1996, Buckner News Alliance and MediaNews amended the JOA to give MediaNews the right to buy the larger *York Daily Record*.

In 2004, MediaNews prepared to exercise its option to buy the *York Daily Record*, but federal ownership laws required it to sell the *York Dispatch* first. In May, MediaNews found a solution: It would switch ownership with Buckner News Alliance, assuming control of the *York Daily Record* and keeping the *York Sunday News* while Buckner News Alliance acquired the *York Dispatch*.¹ On May 5, 2004, *York Dispatch* Special Projects Reporter Lauri Lebo arrived at work, and was instructed along with 18 other reporters to gather her things and go to work for the

¹ Michelle Starr and Sharon Smith, "Newspaper ownership changes hands in York; MediaNews Group bought the Daily Record and Phil Buckner bought the Dispatch," *York Daily Record*, May 6, 2004.

competition, about half a mile down the road. “We looked around and we realized the newsroom had been gutted. It was awful, and people started crying,” Lebo recalls.²

York Daily Record. The paper Lebo was to join had a centrist editorial stance in a solidly Republican county. Its predecessor, the *Gazette and Daily*, had been founded as a Democratic newspaper and had once refused advertising from Republican Barry Goldwater’s presidential campaign out of a conviction that Goldwater would make a poor president. But in 1984, the *Gazette and Daily*’s successor paper, the *York Daily Record*, broke with its Democratic history when it endorsed Republican candidate Ronald Reagan for president.³ Since then, the four-member editorial board—consisting of the overall editor, the editorial page editor, the publisher, and a rotating fourth member—had steered a middle political road.

As a consequence of the 2004 ownership switch, *York Daily Record* Managing Editor Jim McClure became editor, replacing Editor Dennis Hetzel, who explained to the paper’s staff that his priorities conflicted with those of the paper’s new owner. MediaNews Vice Chairman and CEO William Dean Singleton felt that the *York Daily Record*, the morning newspaper he had acquired, had more potential for growth than did the *York Dispatch*, the afternoon paper he had owned; he hoped to expand the *Daily Record*’s coverage area south and west of York to push circulation close to 50,000. Editor Hetzel remarked to the *York Daily Record* about his resignation and the change in ownership: “I think it will be as seamless of a transition as it can be. I think it’s probably a bigger deal for the people in the two newsrooms than it should be for the readers.”⁴

Lebo’s move. Reporter Lebo had been a journalist for 15 years and, as special projects reporter for the *Dispatch*, she had taken part in a 2000 investigation that spurred a new criminal investigation of two Civil Rights-era murders. Race riots had exploded in York in 1969, when a black mob had killed a white police officer.⁵ One reporter on Lebo’s team had discovered that York’s mayor, Charles Robertson, then a police officer, had handed out ammunition to white gangs and encouraged them to kill in retaliation as many black people as they could find. The report led to Robertson’s arrest.

Lebo was instructed to join the *Daily Record* as the chief education reporter, and she chafed at her new assignment as she adjusted to a new cast of editors. “I didn’t feel that education was a substantial beat,” she says. “One of my first assignments was to cover a high school graduation.”

² Author’s interview with Lauri Lebo, on February 2, 2009, in Harrisburg, Pennsylvania. All further quotes from Lebo, unless otherwise attributed, are from this interview.

³ Jim McClure, “In recent years, York County presidential endorsements a mixed bag,” *York Town Square* [a *York Daily Record* blog], October 25, 2008, <http://www.yorkblog.com/yorktownsquare/2008/10/clinton-endorsements-etc.html>.

⁴ Michelle Starr and Sharon Smith, “Newspaper ownership changes hands in York; MediaNews Group bought the *Daily Record* and Phil Buckner bought the *Dispatch*.”

⁵ Daniel J. Wakin, “York, Pa., Mayor is Arrested in 1969 Racial Killing,” May 18, 2001.

But one morning in June 2004, she picked up the *Daily Record* and a freelancer's routine story about a school board meeting caught her eye.

The School Board

In 2004, there were three self-identified fundamentalist Christians on Dover's nine-member school board. One of them, a retired police officer named Bill Buckingham, headed the curriculum committee. Another had before joining the board circulated a petition (which attracted 1,500 signatures) calling for prayer to be reinstated in Dover's public schools as a way to mitigate the trauma of the terrorist attacks of September 11, 2001. But the board, reluctant to trigger the controversy inherent in public school prayer, had instituted instead a moment of silence after the Pledge of Allegiance. Alan Bonsell, the board's head, was also a fundamentalist Christian and an avowed creationist—someone who believes that the world was created as described in the Bible.⁶

Bonsell and Buckingham had privately discussed their belief that creationism had a place alongside evolution in Dover public school science classes. The issue became news, however, in a public school board meeting on June 7, 2004. A Dover resident, herself a former member of the school board, had asked when the board would approve the purchase of new high school biology textbooks. Curriculum Head Buckingham responded that he would not approve the standard biology textbook proposed by the district's science teachers; it was "laced with Darwinism," he said, adding that he was seeking a book that gave creationism a fair hearing.

Joe Maldonado of the *York Daily Record* witnessed the exchange. He was a stringer—a part-time correspondent paid by the story—and he had been covering Dover and its school board meetings for years. Heidi Bernard-Bubb, a stringer for the competing *York Dispatch*, was also present. Both knew that Buckingham might just have ignited a severe controversy in a small town. Lebo read Maldonado's coverage of the meeting in the *Daily Record* the next day and decided to keep an eye on the issue.⁷

Sure enough, the next public school board meeting on June 14 was packed with Dover residents who had read newspaper accounts of the previous meeting. Curriculum Head Buckingham reiterated his skepticism about Darwinism, and argued that there was nothing illegal about teaching creationism alongside it. "Nowhere in the Constitution does it call for separation of Church and State," he said.⁸

Audience members were divided in their reactions. Several religious attendees applauded Buckingham's support for teaching creationism. Bertha Spahr, veteran science teacher and head of

⁶ Lauri Lebo, *The Devil in Dover* (The New Press; New York), 2008, p. 11, 13-14, 21.

⁷ Lauri Lebo, *The Devil in Dover*, p. 22-23.

⁸ Lauri Lebo, *The Devil in Dover*, p. 24.

Dover High School's science department, rose to say that her teachers tried to be sensitive to students' religious beliefs. The school had requested the "least offensive" biology textbook they could find, she said. Buckingham responded: "Two thousand years ago, someone died on the cross. Won't somebody stand up for him?"⁹

Maldonado continued to cover the suddenly-dramatic school board meetings. Lebo, the reporter in charge of the education beat, sensed a larger story emerging. She had kept in regular contact with board members since assuming her new beat a month before, and she now began to press Curriculum Head Buckingham and School Board Head Bonsell about their creationist beliefs. Both told her frankly that they did not believe in evolution and were seeking a legal way to teach alternative theories that accommodated their religious beliefs.

A new theory

The first time Lebo heard the phrase "intelligent design" was a month after she had started tracking Maldonado's reporting on the school board meetings. At a meeting on July 12, 2004, Maldonado noticed a sudden shift in rhetoric. Curriculum Head Buckingham did not once use the word "creationism," as he had in previous meetings. He was now talking about intelligent design as the alternative to evolution he hoped Dover teachers would embrace. Maldonado later recalled:

[The meeting was] a whole lot less Christian and a whole lot more scientific sounding. They were no longer talking about taking a stand for Jesus. It was about taking a stand for our children's education.¹⁰

When Maldonado visited the *Daily Record* office on July 13, the day after the meeting, he stopped by Lebo's desk for a chat. She was intrigued by what he had noticed. She was skeptical about Buckingham's intentions but, without much background in evolutionary theory, she was curious whether "intelligent design" was a valid theory that could bridge the seeming conflict between science and religion. If scientists had found evidence of the hand of God in biology, that would certainly be newsworthy, and even worth discussing in science class. Lebo decided to dig deeper; the theory might deserve its own story. She typed "intelligent design" into a search engine.

At first, there seemed to Lebo nothing objectionable about the theory, though the specifics were laden with scientific and mathematical jargon and somewhat confusing. She found a wealth of information at the website of the Seattle-based Discovery Institute, the largest pro-intelligent design organization in the country. The theorists quoted on the site emphasized the scientific nature of intelligent design—and the theory certainly seemed much more detailed and complex than the simple biblical narrative in which God created the world in six days. William Dembski, a

⁹ Lauri Lebo, *The Devil in Dover*, p. 24.

¹⁰ Lauri Lebo, *The Devil in Dover*, p. 30.

mathematician and philosopher at Baylor University who had written a 1998 book on intelligent design, summarized intelligent design on a section of the website:

Intelligent design begins with a seemingly innocuous question: Can objects, even if nothing is known about how they arose, exhibit features that reliably signal the action of an intelligent cause?... Designed objects like Mount Rushmore exhibit characteristic features or patterns that point to an intelligence. Such features or patterns constitute signs of intelligence. Proponents of intelligent design, known as design theorists, purport to study such signs formally, rigorously, and scientifically. Intelligent design may therefore be defined as the science that studies signs of intelligence.¹¹

That seemed reasonable to Lebo. But she had never been a science reporter, and she was aware that she would have to research both evolution and intelligent design thoroughly to understand the terms of the debate. “I didn’t know [anything] about science at that point... The whole issue of evolution... I accepted it, but I didn’t really know what it meant,” she recalls.

She sought the help of a colleague and friend, Marc Charisse, who had been her editor at the *York Dispatch* and had moved with her to the *Daily Record*. Charisse was a former academic with a PhD in First Amendment Law. He had also read widely on evolutionary theory, though intelligent design was new to him, too. Lebo and Charisse had desks close to one another in the newsroom, and as Lebo began to research evolution and intelligent design through the summer of 2004, they had almost daily conversations about the legal, philosophical, and scientific issues surrounding journalism at the intersection of science, religion, education, and law. At the same time, Lebo tried to read as much as she could find about evolution and the new theory that had arisen to challenge it. After full days at work, she would return home and read late into the evening. Through her conversations with Charisse and her research, Lebo became more and more convinced that evolution and its newest critics deserved their own story in the *Daily Record*. “By late July 2004, I was obsessed,” she recalls.

Darwin’s theory

Charles Darwin, a 19th-century British naturalist, was not the first to argue that species changed—sometimes into entirely different species—over time. He was, however, the first to publish an explanation of how it worked. Darwin’s theory of “natural selection” proposed that in competition for scarce resources, species with features better suited to their environment flourished and reproduced, passing on their advantageous characteristics to their offspring, while species without such advantages eventually died out. Darwin published his findings in *On the*

¹¹ William Dembski, “Intelligent Design,” in Lindsay Jones (ed.), *Encyclopedia of Religion*, 2nd ed. (Macmillan Reference USA; Woodbridge, CT), 2004, http://www.designinference.com/documents/2003.08.Encyc_of_Relig.htm.

Origin of Species in 1859. He concluded that “species have been modified, during a long course of descent, chiefly through the natural selection of numerous successive, slight, favorable variations.”¹² This, he argued, accounted for the wide variety of species on earth, which he claimed had originated millions of years ago from a single ancestor.

He was aware that this idea would draw fierce resistance, as it challenged the Bible’s story of life’s origins as laid out in the book of Genesis. The Bible said that God had created all animals in their present form in a period of six days, culminating with the creation of man and woman, Adam and Eve. The idea that animals—including humans—had developed over millions of years from a series of random mutations that favored some species while others vanished from the face of the globe challenged not only the narrative of the creation story but also the very idea of God as a benevolent, purposeful agent watching over all life forms from the heavens. The backlash was immediate and lasting.

A legal history of evolution

Evolution became a subject of bitter debate—and litigation—in the US as it slowly crept into science textbooks. By the 1920s, groups whose faith led them to understand the Bible as a literal account of events took their objections to Darwin’s theory to state legislatures in an effort to limit or ban school instruction in evolution. Traditionally, curriculum in the US was decided by each school district; there was no national requirement. Thus, teaching practices varied widely from state to state, as well as within state boundaries.

In 1925, Tennessee became the first state to ban the teaching of evolution entirely from public school science classrooms. The Tennessee Anti-Evolution Act, also known as the Butler Act after the legislator who wrote it, proscribed teaching “any theory that denies the story of the Divine Creation of man as taught in the Bible, and [teaching] instead that man has descended from a lower order of animals.”¹³ Eager to test the law’s constitutionality in court, the American Civil Liberties Union (ACLU) recruited a 24-year-old teacher named John Thomas Scopes to be indicted for violating the law. (Scopes was a substitute biology teacher who could not recall whether he had actually taught evolution.) The trial of *Tennessee v. John Scopes*, which journalist H.L. Mencken famously dubbed the “Monkey Trial,” began in May 1925.

Defense lawyer Clarence Darrow hoped to convince the judge to find the Butler Act unconstitutional according to the “establishment clause” of the First Amendment, which stated that “Congress shall make no law respecting an establishment of religion, or prohibiting the free

¹² Charles Darwin, cited in Edward J. Larson, *Summer for the Gods: The Scopes Trial and America’s Continuing Debate over Science and Religion* (Basic Books; New York), 2006, p. 17.

¹³ Butler Act, cited in Noah Adams, “Timeline: Remembering the Scopes Monkey Trial,” *All Things Considered*, July 5, 2005, <http://www.npr.org/templates/story/story.php?storyId=4723956>.

exercise thereof.” Instead, a jury convicted Scopes of violating the Butler Act on July 21, 1925; Judge John Raulston fined him \$100.¹⁴

Other states meanwhile instituted similar bans on teaching evolution.¹⁵ The subject did not reappear in the courts for decades: Textbook publishers sidestepped the issue by leaving evolution mostly out of biology books.¹⁶ But a wave of court cases in the 1960s and ‘70s affirmed evolution’s place in public schools. In 1968, the Supreme Court’s ruling in *Epperson v. Arkansas* struck down evolution-banning statutes nationwide, declaring them “products of fundamentalist sectarian conviction.”

The 1970s saw the emergence of “creation science,” whose proponents claimed that scientific evidence supported the Bible’s account of creation. As a scientific theory that competed with evolution, they argued, creation science deserved a place alongside evolution in science curricula. Creation science advocates promoted laws mandating equal time in science classes for creation science and evolution—and were successful in at least 23 states.¹⁷ In 1987, the Supreme Court in the case *Edwards v. Aguillard* banned these laws, too, as an unconstitutional promotion of religion.

Intelligent Design

In the wake of *Edwards v. Aguillard*, the Institute for Creation Research, then the largest US organization dedicated to creation science, encouraged its allies and advocates to change course. The Institute urged science teachers to expose students to evidence against evolution—on the assumption that such evidence would naturally point toward a creationist explanation of life on earth, even if “creationism” itself could not be taught in public school. Anti-evolutionists also encouraged instructors to emphasize that evolution was a theory rather than a hard fact. Scientists argued, however, that the use of the terms “theory” and “fact” as contrasting forms of knowledge was misleading. One expert noted:

The scientific term with the greatest difference in usage between the public and scientists is the term “theory,” which means “guess” or “hunch” to members of the public, and something far more important to scientists. In science, a theory is a logical construct of facts, laws, and tested hypotheses that explain a natural phenomenon. The proper synonym for theory—

¹⁴ Douglas Linder, “The Scopes Trial: An Introduction,” *Famous Trials* [website], University of Missouri-Kansas City, 1995-2007, <http://www.law.umkc.edu/faculty/projects/ftrials/scopes/scopes.htm>. In Scopes’ 1927 appeal, the Tennessee Supreme Court ruled that the Butler Act did not violate the establishment clause, but overturned Scopes’ conviction on a technicality.

¹⁵ Noah Adams, “Timeline: Remembering the Scopes Monkey Trial,” *All Things Considered*, July 5, 2005, <http://www.npr.org/templates/story/story.php?storyId=4723956>.

¹⁶ Margaret Talbot, “Darwin in the Dock,” *New Yorker*, December 5, 2005.

¹⁷ Eugenie Scott, Expert Witness Statement, *Selman v. Cobb County*, November 17, 2006.

used in the scientific sense—therefore is “explanation,” rather than “guess.” Because evolution is a well-established scientific theory—in the sense of an explanation—it is no more a guess than the theory of gravitation or the theory of the atom.¹⁸

In 1989, the Texas-based Foundation for Thought and Ethics published a textbook, *Of Pandas and People*, in another challenge to evolution. The book contrasted evolution with the alternative theory of intelligent design. The theory posited that certain features of life on earth—such as the eye and the immune system—were so complex that they could not have emerged through a series of successive mutations alone. Such complexity indicated the guiding hand of a designer or intelligent supernatural force. A spokesman for the pro-intelligent design Discovery Institute explained that while many intelligent-design proponents believed the designer was God, “a person could logically argue that some sort of human has been able to design features of life working through time travel... and some people say aliens are the designer.”¹⁹

Meanwhile, the controversy over evolution again reappeared in court. In 2002, the school board in Cobb County, Georgia mandated that disclaimer stickers be placed on high school biology textbooks. The stickers read:

This textbook contains material on evolution. Evolution is a theory, not a fact, regarding the origin of living things. This material should be approached with an open mind, studied carefully, and critically considered.²⁰

Six parents and the ACLU sued. The case had yet to be decided in 2004.²¹ At the same time, school boards in many other states were exploring their own new challenges to evolution.²² The Dover school board was about to become one of them. On August 3, 2004, the board approved by a vote of 5-3, with one abstention, the biology textbook that Curriculum Head Buckingham had dismissed as “laced with Darwinism” in June. Both Buckingham and School Board Head Bonsell voted against the book; Buckingham said that he would introduce a motion, perhaps in September, to have the board approve the intelligent design textbook *Of Pandas and People* as a companion to the biology text.²³

¹⁸ Eugenie Scott, Expert Witness Statement, *Selman v. Cobb County*, November 17, 2006.

¹⁹ Laurel Rosen, “Darwin Faces a New Rival,” *Sacramento Bee*, June 22, 2003. Quoted in Eugenie Scott, Expert Witness Statement, *Selman v. Cobb County*, November 17, 2006.

²⁰ Associated Press, “Judge nixes evolution textbook stickers,” January 13, 2005, <http://www.msnbc.msn.com/ID/6822028/>.

²¹ This ruling was appealed, remanded back to the district court on a technicality, then settled in favor of the plaintiffs.

²² Laura Parker, “School science debate has evolved,” *USA Today*, November 29, 2004.

²³ Joseph Maldonado, “Biology book squeaked by; Dover area school’s debate included accusations of blackmail,” *York Daily Record*, August 4, 2004.

When science meets politics

As Dover's school board deliberated textbook choices during the summer of 2004, evolution wasn't the only scientific concept under debate in the public sphere. Far from existing in an inviolable realm of pure fact, scientific subjects such as environmentalism and global warming, stem cell research, and evolution were political battlegrounds during the heated presidential election then underway. A voter's perspective on such issues moreover tended to correlate with his or her party affiliation. Thus in declaring that scientific data firmly supported a given conclusion, journalists risked implicitly aligning themselves with a political party.

Stem cell research, for example, posed unique reporting challenges. Embryonic stem cells could be programmed to grow into many different kinds of cells, potentially providing a way to regrow tissue damaged by such diseases as Parkinson's and diabetes, perhaps eventually curing them. In 2001, President George W. Bush limited funding for stem cell research, restricting it to existing lines of stem cells and forbidding the production of new ones—which required the destruction of human embryos. His Democratic opponent in the 2004 presidential election, John Kerry, vowed to lift the restrictions.

Opponents of embryonic stem cell research argued that it was unproven to provide the cures its proponents promised, and that the ethical problems of destroying human embryos outweighed the potential benefits of the research. This side included evangelical Christians who believed life began as soon as an embryo formed—but moral and ethical objections to embryonic stem cell research were by no means the exclusive province of the religious. The research's proponents, meanwhile, among them Democratic candidate Kerry, chided the Bush administration's seemingly hostile attitude toward scientific evidence supporting man-made global warming, and pointed to the stem cell debate as another instance in which the President and his party placed ideology above scientific evidence. At the same time, some of the scientists who touted embryonic stem cell research's benefits stood to gain financially from grants to conduct the research. Reporters covering the story were thrust into a thicket of competing interests.

The stem cell debate crystallized many of the challenges facing science journalists more generally. Science reporters—even those who covered science exclusively—were often plunged into subjects in which they had little or no expertise and expected to evaluate competing claims fairly. They were forced to rely on experts with unclear political, personal, and financial motivations of their own in negotiating what one writer called “the widening gap in knowledge between the scientific expert and the layman,” trying to package information from the former for consumption by the latter. Furthermore, this writer continued:

The vulnerability of science journalists converges with the economic and social constraints of newswriting to give an unusual degree of power to

those best organized to provide technical information in a manageable and efficiently packaged form.²⁴

Kerry and Bush had staked out opposite sides in several other scientific matters, among them intelligent design. Bush argued that, as a critique of a scientific theory, intelligent design deserved a fair hearing in classrooms. Kerry maintained that “ideology should not trump science in the context of educating our children,” but said it was ultimately up to local communities to set their own curricula.²⁵

The Dover school board would soon do so.

September story

Curriculum Head Buckingham’s plan to introduce the intelligent-design textbook *Of Pandas and People* into Dover High School seemed to Lebo a good opportunity to write a piece explaining intelligent design to readers. As she spoke to experts in the fields of evolution and intelligent design, she was acutely conscious of her own lack of expertise in either subject. That made it difficult to assess the credibility of her sources. She notes:

You do want to be fair. You don’t want to say that somebody has a lock on truth... At first, you keep giving everybody the benefit of the doubt... If you don't know your subject, it's scary... You don't want to get stuff wrong. So you do play it cautious and let them do most of the talking.

But over her months of reporting, she became more and more convinced that most scientists, even if they criticized the theory of natural selection as specifically laid out by Darwin, accepted the basic premise of evolution. Several scientists Lebo found at universities around the country echoed the sentiment. She found the evolutionary biologists she interviewed patient in explaining the subject to her—particularly Kenneth Miller, a Brown University biologist who had written the textbook the board had adopted.

She found intelligent design scientists at the Discovery Institute noticeably less helpful, however. She recalls:

Gradually I started to pick up that... whenever I’d ask the Discovery Institute these questions [about their theory], they’d recite the same words back... and it seemed like they were trying to use long words... And so it was always this sort of weird feeling that I don't think you guys are being

²⁴ Dorothy Nelkin, *Selling Science* (W.H. Freeman and Company; New York), 1995, p. 80, 123.

²⁵ “Bush and Kerry offer their views on science,” *Science*, October 1, 2004, <http://www.sciencemag.org/cgi/content/full/306/5693/46>.

straight with me... I'm supposed to be alert to this. But when you're working in a subject that's way over your head, it's kind of hard to [tell].

She grew suspicious that the intelligent design theorists she interviewed were being at best disingenuous, and at worst misleading. In particular, the theorists she interviewed seemed unable to explain to her how intelligent design worked, at least in a way that she could understand. Evolutionary biologists like Miller provided detailed explanations of natural selection, the mechanism through which evolution worked—but Lebo was unable to identify from her interviews a parallel mechanism for how intelligent design played out in nature. Did the designer fashion each individual in a species, or just the first? Was the designer responsible for gradual changes over time, or only the sudden emergence of complex features?

By September, two months after she had first heard of intelligent design, Lebo felt comfortable enough with her knowledge of the topic to write a story explaining both sides of the debate. She and her colleague Charisse discussed how she should write it. It would be a difficult story. Lebo would have to explain complex concepts in readable prose, hopefully without oversimplifying to the point of inaccuracy. More complicated still was the issue of how to present both sides of the debate. Should she devote half the article to intelligent design proponents' claims and the other half to the clear majority of scientists who supported evolution? Or should she organize her story to reflect the lopsidedness of the debate? How could she cover fairly a real political and educational controversy in her community while staying true to the science?

"Just the way the words sound to us, 'intelligent design,' seemed to make a lot of sense and not really be very arguable," Charisse says. "I mean the idea that the wonder of creation might encourage one to believe in a creator. I mean, heck, that's in Darwin."²⁶ He encouraged Lebo to try to make sense out of intelligent design proponents' arguments, and to be fair to them even if she disagreed. At the same time, Lebo and Charisse discussed whether fairness and accuracy were sometimes at odds. They considered various hypothetical reporting challenges: If people who believed the earth was flat were holding a seminar in York, should reporters cover it as they would any other "science" seminar? How should one report on historians who denied the Holocaust? Did they, too, deserve "fair" treatment? Charisse says:

My notion has always been well, put them out there and debate them... and be willing to defend truth in the marketplace of ideas. But the other side... is that, do you not give some credence to an otherwise absurd idea just by being willing to sit down and debate it? Aren't there some ideas that are just so out there and ludicrous that what serves the higher truth, if you will, is to say no, I'm not going to debate that with you. That's absurd.

²⁶ Author's phone interview with Marc Charisse, on February 17, 2009. All further quotes from Charisse, unless otherwise attributed, are from this interview.

There was also the more concrete issue of how the *Daily Record's* readers would receive Lebo's coverage. If religious readers perceived her story as biased in favor of evolution—regardless of the evidence she presented in its favor—she risked alienating a large section of the *Daily Record's* readership. On the other hand, being too receptive to intelligent design could sacrifice accuracy and draw ire from the other direction. Charisse says:

There are stories that, whatever your personal opinion of them... you know they're going to cause you grief in your market... There's no winning there... No matter what you do, you're going to get raked over the coals.

Lebo decided to give a balanced description of the debate over Buckingham's proposal to teach intelligent design. She presented an example from the intelligent design textbook *Of Pandas and People* to illustrate the argument in favor of the theory, which she described as "the idea that all life was created by a divine being." The book's authors, Percival Davis and Dean Kenyon—both biology professors, creationists, and intelligent design proponents—pointed to the giraffe's neck as evidence of design. Lebo wrote:

The book argues that the giraffe's long neck depends on a series of integrated adaptations that could not have happened separately, so they must have been present from the beginning of the species' existence. A giraffe's circulatory system includes a coordinated system of blood pressure controls. The book says pressure sensors along the neck's arteries monitor the blood pressure and activate contraction of the artery walls. "The complex circulatory system of the giraffe must appear at the same time as its long neck or the animal will not survive," authors Percival Davis and Dean Kenyon write.²⁷

Lebo noted that "supporters of teaching creationism say [Dover's debate over evolution is] about fairness, giving equal time to competing theories." But she also quoted extensively from evolutionary biologists she had interviewed. One of them, John Staver, director of science education at Kansas State University, said that since intelligent design theory could not be tested by replicable experiments, it was "not science"; he further noted that there was little controversy about evolution among scientists. Staver suggested: "ID [intelligent design] folks are appealing to a public that we know has a relatively low level of scientific literacy."²⁸

²⁷ Lauri Lebo, "An evolving controversy; Dispute over teaching about the origins of life is likely to flare again this week," *York Daily Record*, September 5, 2004.

²⁸ Lauri Lebo, "An evolving controversy; Dispute over teaching about the origins of life is likely to flare again this week."

Lebo and Charisse felt the piece was informative and fair. Lebo's primary editor on the story, Special Projects Editor Scott Blanchard, had few criticisms and did not change the story significantly. It ran on September 5.²⁹

Shortly after the story ran, the National Center for Science Education, a non-profit institution devoted to fighting challenges to teaching evolution, contacted Lebo with suggestions for further reporting and an offer to be a resource. Director Eugenie Scott told her that evolution was the foundation of modern biology—that was why the stakes of the educational debate were so high. None of the rest of biology made sense except in light of evolution, Scott argued, and if students did not receive a firm grounding in the scientific consensus on the matter, the rest of their biology education could suffer.

The statement and the lawsuit

In early October, an anonymous donor gave 50 copies of the intelligent design textbook *Of Pandas and People* to the Dover Area School District. School Superintendent Richard Nilsen approved the book's use as a reference material; because doing so was not a curriculum change, it did not require the school board's approval. Two weeks later, on October 18, 2004, School Board Head Bonsell moved to change the ninth grade biology curriculum slightly—adding the sentence: "Students will be made aware of the gaps/problems in Darwin's theory and of other theories of evolution, including, but not limited to, intelligent design." The motion passed 6-3.³⁰ Reporter Maldonado wrote about the meeting for the next day's paper, noting that a district biology teacher, Jen Miller, was concerned about being required to teach intelligent design.

On November 19, the school board issued a press release saying that the press—Lebo and Maldonado included—had gotten it wrong. The board had no intention of mandating the "teaching" of intelligent design; rather, they wanted students to be "made aware" of the concept. At the same time, the board released a four-paragraph statement with which they now expected teachers to introduce the evolution section of the curriculum, coming up in January. The statement pointed to "gaps in [Darwin's] theory... for which there is no evidence." It also noted:

Intelligent Design is an explanation of the origin of life that differs from Darwin's view. The reference book *Of Pandas and People* is available in the library along with other resources for students who might be interested in gaining an understanding of what Intelligent Design actually involves.³¹

The statement stopped short of defining intelligent design. Less than a month later, on December 14, 2004, 11 Dover parents and the ACLU filed a lawsuit to fight the curriculum change.

²⁹ For full text of the article, see Appendix 1.

³⁰ Lauri Lebo, *The Devil in Dover*, p. 45-46.

³¹ For full text of the statement, see Appendix 2.

They sought to prove that intelligent design was an attempt to introduce religion into science classrooms, and was therefore a violation of the First Amendment's establishment clause. They planned to do so by proving that intelligent design was simply another name for creation science, whose place in public schools the courts had repudiated in 1987. Close on the heels of a divisive US presidential election in which Republicans had prevailed, the lawsuit attracted national media attention. Lebo later recalled: "The school district became a mirror to what was playing out across the country that autumn."³²

The school board's statement was due to be read when Dover students reached the evolution section of the curriculum on January 13, 2005—in one month. There was no way the lawsuit would be brought to trial and resolved by then. But the plaintiffs had the option of asking a judge for an injunction against the curriculum change. Meanwhile, on Thursday, January 1, all but one of the teachers in the Dover High School science department signed a letter refusing to read the statement.

Covering the controversy

As Lebo covered the lawsuit and its participants, she had gradually begun to write with more authority, and did not feel she needed to back up as many assertions with quotes or with references to what "scientists say." Now convinced of the truth of the broad outlines of the theory of evolution by natural selection, she struggled to construct her stories in a way that would acknowledge the controversy without seeming to give equal scientific weight to intelligent design, which she now saw as poorly disguised creationism.

Lebo wrote, edited, and rewrote with an attentive eye to the macro-structure of her articles, as well as the implications of individual words. Was it fair to compare intelligent design to creationism when that would anticipate the opinion sought in the lawsuit just filed? Was it accurate not to, given that Bonsell and Buckingham had openly discussed their creationist beliefs with her? What about the distinction the school board insisted on between the words "teach" and "make aware?" Which was more accurate? Did intelligent design violate the definition of "science," as its critics claimed? In a devout community skeptical about evolution, how could she dispute the evidence for intelligent design without seeming to attack religion?

The actual trial was still months away. On January 6, lawyers for the plaintiffs deposed members of the school board. Curriculum Head Buckingham, pressed about his June and July statements supporting incorporating creationism into the science curriculum, denied having made them. Board Head Bonsell and Superintendent Nilsen denied having heard them. This directly

³² Lauri Lebo, *The Devil in Dover*, p. 59.

contradicted two newspaper accounts of the event, Maldonado's in the *York Daily Record* and Bernard-Bubb's in the *York Dispatch*.³³

Lebo was on vacation in Seattle as the story unfolded. Another reporter, Teresa Boeckel, had been assigned to cover it. When Lebo accessed the story on the *Daily Record's* website on January 7, she was incensed by Boeckel's balanced treatment of a statement Lebo felt was clearly a lie. "They denied what our reporters had printed," Lebo recalls. Boeckel began the story with Richard Thompson, a lawyer for the Dover Area School District, calling it a "good sign" that lawyers for the plaintiffs had opted not to file an injunction to stop the board from implementing its new policy. "After several days of depositions it became clear that they simply did not have a strong enough case to ask that the policy be blocked," Thompson said. "Clearly, if they thought they could have succeeded, they would have asked the court to stop the policy before it was implemented."³⁴

Boeckel wrote that Buckingham's statements before the school board were "in dispute." Lebo felt that was generous to the point of being misleading. She felt that board members were lying under oath—based not only on Maldonado's reporting, which she trusted, but also on her own conversations with Buckingham and Bonsell. "I just remember thinking this is not a fair story, [because] it's perfectly balanced," she recalls. Looking back on her own coverage, she immediately regretted that she had not specifically used the word "creationism" in describing their stances on evolution education—it would have provided additional evidence to shore up Maldonado's reporting.

Lebo returned to the paper the following week determined to prove that Bonsell and Buckingham had lied. She recalled the media attention the meetings had generated, and contacted the local Fox affiliate to see if the station had a taped interview of Buckingham using the word "creationism." They did. Lebo hurried to the studio to watch the tape, on which Buckingham stated: "We're just looking for a textbook that balances the teaching of evolution with something else, like creationism."³⁵

She went directly back to the office to write her article. Again, she wrestled with word choice. Could she say that Bonsell and Buckingham had lied in their depositions? Was it too harsh, even if it was true? She settled for describing Buckingham's denial that he had ever suggested teaching creationism at Dover High School, alongside evidence from Fox's tape and previous news reports.

³³ Lauri Lebo, *The Devil in Dover*, p. 72-73.

³⁴ Teresa Ann Boeckel, "District lawyers see 'good sign'; But lawyers for the parents said they can still prove their case." *York Daily Record*, January 7, 2005.

³⁵ Lauri Lebo, *The Devil in Dover*, p. 84.

On January 18, 2005, Dover High School reached the evolution section of the science curriculum. Science teachers had refused to read the four-paragraph statement noting “gaps” in the theory of evolution by natural selection and pointing students to the intelligent design book *Of Pandas and People*; School Superintendent Richard Nilsen and Assistant Superintendent Michael Baksa did so in their place, then immediately left the classroom without taking questions. The Dover High School science teachers and close to a dozen students left the classroom in protest while the statement was read.³⁶

Lebo was on hand after school to ask students how they felt about the controversy. One said he had not paid attention to the statement; a few expressed confusion about what intelligent design actually was, and wondered why Nilsen and Baksa had not allowed them to ask questions. Lebo wrote about their reactions for the next day’s paper.

Holes in evolutionary theory?

The trial *Kitzmiller v. Dover Area School District* was set to begin on September 25, 2005—over a year after the school board had touched off debate in their search for a new biology textbook.³⁷ Lebo had been immersed in scientific literature since the previous summer, and had been in regular contact with the Discovery Institute, the National Center for Science Education, and scientists at several universities and research institutions around the country. Bonsell and Buckingham, at the request of their lawyers, had stopped giving her interviews since their depositions.

As national media had turned their eyes toward Dover, Lebo had studied other reporters’ strategies for writing about evolution and intelligent design. She particularly admired the writing of *New York Times* science reporter Cornelia Dean, who in covering challenges to evolution in a Kansas school district for her paper’s science section that summer, had written:

Mainstream scientists say alternatives to evolution have repeatedly failed the tests of science, and the criticisms have been answered again and again. For scientists, there is no controversy.³⁸

Lebo, however, had a different audience to serve. She was not a veteran science reporter like Cornelia Dean writing for people who were interested in science. She was a small-town reporter covering a real conflict in her community. Though she enjoyed considerable autonomy

³⁶ Lauri Lebo and Joe Maldonado, “Students miss ID idea; Dover Area school officials told students about intelligent design, then left,” *York Daily Record*, January 19, 2005.

³⁷ National Center for Science Education, *Kitzmiller v Dover* timeline, October 17, 2008, <http://ncseweb.org/creationism/legal/kitzmiller-v-dover-timeline>.

³⁸ Cornelia Dean, “Opting out in the Debate on Evolution,” *New York Times*, June 21, 2005. Quoted in Lauri Lebo, *The Devil in Dover*, p. 95.

and had not encountered much interference from editors in her coverage, in August she got a hint that *York Daily Record* Editor McClure was not entirely happy with her approach.

Special Projects Editor Blanchard oversaw Lebo's day-to-day coverage of the story, and in August 2004, a month from the beginning of the trial, he told her Editor McClure wanted her to research and write a story exploring the holes in evolutionary theory. Lebo felt the assignment was reasonable; she knew from her previous reporting that there was some debate among scientists about how evolution worked, though the vast majority of them accepted evolution itself. But she also suspected that McClure had other motives for assigning the story—that he was trying to impose balance on Lebo's coverage of a debate her reporting told her was fundamentally unbalanced. Lebo recalls:

As I worked on the story, it kind of shifted and I simply wrote one that looked at the vacuousness of intelligent design. The main reason I did that was because, while questions remain about evolution, there is no question as to its validity and I had no intention of trying to raise questions about it in the interest of balance. I do remember consciously doing that.³⁹

Lebo filed her story on August 13. That evening, Special Projects Editor Blanchard called her. He explained that what she had written did not make sense with the headline he wanted to use: "Are there holes in evolution theory? Some say they should be taught; others say there are no holes." Blanchard suggested some changes that would emphasize more strongly the proponents of teaching "holes in evolution"—among them Pennsylvania Senator Rick Santorum (R-PA), as well as 55% of US adults surveyed by *Time Magazine* the previous week. Lebo found the changes unobjectionable. The *York Daily Record* published the story on August 14, 2005.

Spotlight on Dover

As the trial approached, Dover's bitter divisions over science and religion were on full display. Letters from both sides of the debate had poured into the newspaper over the previous year, and it was the *Daily Record's* policy to publish as many as possible subject to space constraints. Between January 2004 and May 2005, the *Daily Record* had printed 168 letters, editorials, and op-eds relating to the controversy; the writers were divided almost exactly in half on the issue. (This was partly the result of editorial page editors' conscious effort to balance each op-ed on the controversy with another taking the opposite stance.)⁴⁰

The four-member editorial board itself—which included Editor McClure and Editorial Page Editor Scott Fisher—had differing opinions on the merits of intelligent design, and so avoided

³⁹ Lauri Lebo's email to author, March 4, 2009.

⁴⁰ Chris Mooney and Matthew Nisbet, "Undoing Darwin," *Columbia Journalism Review*, September/October 2005.

taking a firm stance on the science.⁴¹ But the editorial board repeatedly criticized the school board for subjecting the community to an expensive lawsuit. McClure and Fisher were also both apparently distressed not only because the lawsuit was the subject of such conflict in their small community, but also because Dover was now in the national spotlight and, they felt, being portrayed as a fundamentalist backwater. Comedy news program *The Daily Show* had showcased a mock special report called “Evolution Schmevolution” about the Dover controversy every night between September 12 and September 15. On September 18, Fisher wrote an editorial in response to the *Daily Show* feature:

“Evolution Schmevolution” made you laugh, it made you cry. It made you wonder why: Why is the Dover school board making us such a laughingstock? Why?

The *Daily Record*’s smaller competitor and Lebo’s former employer, the *York Dispatch*, had meanwhile taken a firm pro-evolution editorial stance.⁴²

Lebo had so far written most of her stories with little interference from editors. She was a veteran reporter in charge of her own beat. But in a general newsroom conversation a few weeks before the trial was to begin, Managing Editor Randy Parker and Editor McClure reminded Lebo repeatedly of her obligation to remain “fair and balanced” during the trial. She shrugged off the advice, which she interpreted as a generic comment on reporters’ obligations in general. But she was aware that she would no longer be covering a science story, but a court story with each side presenting its case to a judge. The weight of the scientific evidence was on evolution’s side, but what about the legal evidence?

The trial: The plaintiffs’ case

By the time the trial began on September 26, 2005, Lebo had spent more than a year trying to cover the story of intelligent design, evolution, and the lawsuit against the Dover school board from many different angles. She had filed stories on the subject almost weekly—sometimes more often depending on the pace of new developments in the case. She had described how the Thomas More Law Center, which the school board hired to defend it in the lawsuit, advertised itself as a defender of Christian freedoms and championed “such issues as school prayer and ‘promoting public morality.’”⁴³ She had interviewed students about what they felt about the controversy. (Many were indifferent or thought the furor was “dumb,” though there was a handful of students on each side of the debate).

⁴¹ Chris Mooney and Matthew Nisbet, “Undoing Darwin.”

⁴² Chris Mooney and Matthew Nisbet, “Undoing Darwin.”

⁴³ Lauri Lebo and Joseph Maldonado, “Dover curriculum move likely a first; Even some supporters of intelligent design suggest the board might have overstepped,” *York Daily Record*, October 20, 2004.

She had pointed out objections to the theory of intelligent design from scientists around the country, as well as representatives of the National Academy of Sciences and the American Associations for the Advancement of Science. Even the pro-intelligent design Discovery Institute, she reported, felt the Dover School Board was subjecting the theory to an unnecessary legal test, and did not support the board's controversial curriculum. Lebo had also covered the result of a similar controversy in Cobb County, Georgia, where parents had sued the school board over textbook disclaimer stickers calling evolution "a theory, not a fact." In January 2005, a judge had ordered the stickers removed. Lawyers for the Dover School Board said the decision had no bearing on the case in Dover, but lawyers for the plaintiffs said it set a helpful precedent. And in advance of Dover's own trial, Lebo had described Dover residents' feelings about intelligent design in their curriculum: 54 percent of them supported its inclusion.⁴⁴

Now she would be filing daily stories from the courtroom. The first half of the trial would be devoted to the plaintiffs' case, which began with testimony from the biologist and textbook author Kenneth Miller. Lebo chronicled Miller's testimony about the flaws of intelligent design, how he reconciled his belief in evolution with his religious beliefs (he was a devout Catholic), and what he felt was the danger intelligent design posed to science education. She summarized plaintiffs' attorney Eric Rothschild's opening statements, in which he argued that the school board was violating the First Amendment by trying to introduce religion into the classroom. She also quoted defense attorney Patrick Gillen's counterargument that the board was only trying to "advance science, not religion."⁴⁵ Her first article on the trial began:

Dover school district's attorneys call the mention of intelligent design in the school district's biology curriculum "a modest change." But Ken Miller fears a four-paragraph statement mentioning the concept might force students to choose between God and science.

She continued to cover the plaintiffs' case as their lawyers called expert witnesses from the fields of biology and chemistry in an attempt to demonstrate the solid foundation on which evolutionary theory rested. The second part of their strategy was to show the strong link between intelligent design and creation science, which courts had banned from public schools nationwide in 1987.

Lebo found the scientific testimony fascinating, but witnessed the most dramatic moment of the trial on Wednesday, October 7, 2005. That day, Barbara Forrest, a professor of philosophy at Southeastern Louisiana University, took the stand as a witness for the plaintiffs. In her testimony, she traced the roots of intelligent design theory not to the biblical creation story but to the Gospel of John, which states: "In the beginning was the Word, and the Word was with God, and the Word

⁴⁴ Lauri Lebo, "Poll: ID matters to Dover voters; A survey found intelligent design would influence a majority of voters," *York Daily Record*, January 28, 2005.

⁴⁵ Lauri Lebo, "Dover's test begins; as the trial got underway, a scientist testified intelligent design is dangerous," *York Daily Record*, September 27, 2005.

was God.” Forrest cited a 1999 article in the Christian magazine *Touchstone* in which leading intelligent design theorist William Dembski had been interviewed. Dembski had said: “Intelligent design is just the Logos theology of John’s Gospel restated in the idiom of information theory.”⁴⁶

Forrest also presented evidence that the intelligent design textbook *Of Pandas and People* had in early drafts been a creationist textbook. The wording of the intelligent design version of the textbook was almost exactly the same as in earlier versions, except that the words “intelligent design” had been substituted for “creationism,” and “design proponents” for “creationists.” The switch had taken place almost immediately after the *Edwards v. Aguillard* decision banned creation science from public schools. Forrest read from the 1986 version of the book:

Creation means that the various forms of life began abruptly through the agency of an intelligent creator with their distinctive features already intact—fish with fins and scales, birds with feathers, beaks, and wings, etc.

She compared that to versions published in 1989 and 1993, which said instead:

Intelligent design means that various forms of life began abruptly through an intelligent agency, with their distinctive features already intact—fish with fins and scales, birds with feathers, beaks, and wings, etc.⁴⁷

She revealed further that the textbook’s publishers, the Texas-based Foundation for Thought and Ethics, had performed an incomplete substitution in an early draft—in one instance writing “cdesign proponentsists,” a mistaken combination of “creationists” and “design proponents.” Lebo chronicled her testimony in detail.

The trial: The defense

Since Lebo was reporting on the day-to-day events of the trial, and the first week was devoted to the plaintiffs’ case, the question of balance never arose. Neither Lebo nor her editors felt that she needed to temper arguments favoring evolution with arguments favoring intelligent design. Those would come later.

On Tuesday, October 18, Lehigh University microbiologist Michael Behe, one of the founding intellectual fathers of the intelligent design movement, took the stand for the defense. He explained that intelligent design proponents inferred design from the “purposeful arrangement of parts” in biology; that living things and their parts seemed to have been planned with intent. As an example, he cited the bacterial flagellum, whose tail rotates by means of a motor-like structure at its base. Behe argued that this motor required 30 to 40 protein parts to function, and that the

⁴⁶ Lauri Lebo, *The Devil in Dover*, p. 138.

⁴⁷ Lauri Lebo, *The Devil in Dover*, p. 140.

removal of any one of them would render the structure useless—in particular, none of the proteins on their own conferred survival advantages that favored their reproduction. Thus, a series of incremental steps as proposed by Darwin could not explain the structure, which must have appeared fully formed.

Behe had written a book about intelligent design, *Darwin's Black Box*, in which he argued that “intelligent design theory focuses exclusively on proposed mechanisms of how complex biological structures arose.” Referring to this claim, plaintiffs’ attorney Eric Rothschild asked Behe under cross-examination: “Please describe the mechanism that intelligent design proposes for how complex biological structures arose.”

Lebo watched as Rothschild repeated the question several times and Behe, in Lebo’s estimation, used the kind of vague and confusing language she remembered from her earlier reporting on intelligent design. Lebo thought he was dodging a question about which she too had long been curious. Biologists had explained to her satisfaction how evolution worked—through natural selection. But how did intelligent design work? Behe finally replied to Rothschild:

[Intelligent design] does not propose a mechanism in the sense of a step-by-step description of how those structures arose. But it can infer that in the mechanism, in the process by which these structures arose, an intelligent cause was involved.⁴⁸

Lebo thought this moment represented another significant victory for the plaintiffs, and that the defense’s case was so far unimpressive. She returned to the *Daily Record’s* offices that evening to write her story on the day’s events. She began with what she felt was the most important event of the day:

One of intelligent design's leading experts could not identify the driving force behind the concept. In his writings supporting intelligent design, Michael Behe, a Lehigh University biochemistry professor and author of “Darwin's Black Box,” said that “intelligent design theory focuses exclusively on proposed mechanisms of how complex biological structures arose.” But during cross examination Tuesday, when plaintiffs’ attorney Eric Rothschild asked Behe to identify those mechanisms, he couldn’t.⁴⁹

Lebo knew her editors had not been entirely happy with her coverage of the trial so far. She suspected that she had enjoyed relative editorial freedom because the first half focused on the plaintiffs. Now that the defense—that is, the pro-intelligent design side—was presenting its case, editors probably expected her to present that side the same way she had presented the plaintiffs’—with a heavy focus on the strengths of their case. But, as she recalled later, she felt that plaintiffs’

⁴⁸ Lauri Lebo, *The Devil in Dover*, p. 155.

⁴⁹ Lauri Lebo, *The Devil in Dover*, p. 157.

attorney Rothschild had “eviscerated” the defense in cross-examination.⁵⁰ She did not want to impose a false sense of balance on her article; at the same time, she wanted to be fair to the legal process in which both sides did get an equal chance to present their views. Did she owe the defense the same benefit of the doubt that the judge in the case did? Should she approach her court reporting differently from her science reporting?

⁵⁰ Lauri Lebo, *The Devil in Dover*, p. 158.

Appendix 1

An evolving controversy; Dispute over teaching about the origins of life is likely to flare again this week

By Lauri Lebo
York Daily Record
September 5, 2004

The debate over teaching creationism in science class has quieted down since the Dover Area School Board approved its high school biology textbook last month.

But some Dover Area School Board members say they expect to revisit the issue at their next meeting, when William Buckingham will propose introducing to the district the controversial book "Of Pandas and People: The Central Question of Biological Origins."

Buckingham says the book should be taught as a companion text to the approved biology book, and he thinks he will have the support at the Tuesday meeting to get the book into the classroom.

"I feel good about it," he said. "I think we have a chance."

It's a case biologists across the country say they are familiar with and one that is similar to what is happening in other states.

The book teaches the concept of "intelligent design"—the idea that all life was created by a divine being—and supporters of teaching creationism say it's about fairness, giving equal time to competing theories.

But to others, it's an attempt to introduce religion through the back door.

"It's not science," said John Staver, director of science education at Kansas State University.

The concept of intelligent design requires faith, he said, which contradicts the critical thought demanded in science.

Fair and balanced

While Buckingham considers the Bible's Book of Genesis to be life's blueprint, he says the issue of intelligent design is a pragmatic compromise between his beliefs and what the law will allow.

Intelligent design does not necessarily contradict many of the arguments in favor of evolution—such as the ideas of natural selection and adaptation, or the scientific belief that the Earth is as much as 4.5 billion years old.

But intelligent design goes beyond science—evolutionary theory may explain how we got here, but it doesn't answer why.

"Pandas" seeks to answer that question by arguing that natural selection and changes to the gene pool could not have happened randomly.

But the problem is that intelligent design, like creationism, violates the scientific method, said Karl Kleiner, a biology professor at York College. No experiment can prove or disprove God's existence.

"Intelligent design still relies on an event that is not replicable," Kleiner said. Scientists test their theories by trying to prove them false, and advocates of intelligent design are unable to do that, he said.

"They can't say, 'Well, maybe a divine being didn't create it.'"

Flagella and giraffes

"Pandas" uses the giraffe's long neck to illustrate the argument for intelligent design.

The book argues the giraffe's long neck depends on a series of integrated adaptations that could not have happened separately, so they must have been present from the beginning of the species' existence.

A giraffe's circulatory system includes a coordinated system of blood pressure controls. The book says pressure sensors along the neck's arteries monitor the blood pressure and activate contraction of the artery walls.

"The complex circulatory system of the giraffe must appear at the same time as its long neck or the animal will not survive," authors Percival Davis and Dean Kenyon write.

Similarly, Michael J. Behe, a biochemistry professor at Lehigh University, coined the term "irreducible complexity"—the idea that in order for many organisms to have evolved at the cellular level, multiple systems would have had to arise simultaneously. In many cases, he argues, this is a mathematical impossibility.

Behe uses the bacterial flagellum as an example, arguing that for the propeller-like appendage to move, between 30 and 40 protein parts are needed. Removal of any one of those parts causes the system to cease functioning—just as a mousetrap depends on all its pieces to operate.

Darwinism's theory of intermediate and incremental evolutionary steps can't explain this, Behe said. "It's one big step," he said.

But Kleiner says other scientists have found that the flagellum parts aren't as unique as Behe states and intelligent design proponents are missing a key point—that for every evolutionary step, there were countless genetic mutations that provided no useful advantage to the organism and died out.

Kleiner said supporters often use the eye to argue for intelligent design, saying that surely no singular organism was born with a genetic mutation that bestowed eyesight.

Misrepresenting Darwinism?

But Kleiner said such an argument misrepresents Darwinism.

"It didn't happen overnight," he said.

Instead, a group of cells might have been light-sensitive, permitting an organism to sense shadows, perhaps an advantage in escaping predators. Such a trait would permit the organism to survive long enough to produce offspring who in turn inherited the genetic mutation.

Over time, incremental changes occurred, each one providing an evolutionary advantage until full eyesight evolved.

The same theory applies to the giraffe's long neck, Kleiner said.

"This is the process by which we have diversity on Earth," he said. "If it's not a useful trait, then it will be eliminated from the gene pool."

Additionally, design advocates misrepresent evolution, scientists say, when they maintain that mainstream biology rules out the handiwork of a divine creator.

"Evolution doesn't deny the existence of a God. It just doesn't require one," Kleiner said.

Mainstream biologists and paleontologists continue to debate the fossil evidence for the origins of life, and just as there is room for debate within evolutionary theory, there is disagreement within intelligent design. While Behe, a Christian and author of "Darwin's Black Box," believes in a common ancestry—the idea that all life, including humans, descended from a common ancestor—other ID proponents disagree and say that a divine being created each individual lifeform with a unique plan.

Professor John Staver has followed the Dover battle from his office at Kansas State University.

National battlegrounds

Since his previous appointment as co-chairman of the 1999 committee to revise science requirements for Kansas schools, Staver has been at the forefront of the battle between evolution and creationism.

Five years ago, the Kansas Board of Education voted to downplay evolution in the state's science standards—which, for many of the state's biologists, became something of a national embarrassment.

After the November 2000 elections, the state board's political makeup changed and the board approved standards stating evolution is a concept unifying all scientific disciplines. But the state Board of Education is expected to be taken over by pro-creationists after the fall election, and Staver said he expects he will be revisiting the issue in 2005.

Ohio has become another battleground, Staver said. After intense lobbying by intelligent-design proponents, the state school board there recently completed curriculum standards, including the writing of model lesson plans, one of which incorporates intelligent design.

Efforts in Pennsylvania to introduce creationism to a statewide curriculum have so far been unsuccessful, but the wording of the state Department of Education's policy leaves the question of teaching creationism open to debate.

The state's official statement on creationism doesn't say it can't be taught in the public schools, and officials are vague on how the subject can be handled.

"Whether it is constitutional to teach creation in the public schools depends on the context in which the instruction occurs," the statement says.

"It is clearly permissible to teach creation as part of a course regarding theories of evolution, which course is part of the school district's curriculum. . . . What occurs or what is proposed in the course must be viewed on an individual basis."

Kleiner expresses the concern that intelligent design could potentially curtail critical thinking and quash scientific curiosity.

"What were the factors that made the giraffe tall?" Kleiner asked. "It doesn't matter. God did it. "Clearly if your response is to say evolution doesn't happen, then, basically, not to think in evolutionary terms is not to think at all," he said, quoting scientist and Nobel laureate Peter Medawar.

Behe, on the other hand, argues that not permitting intelligent design in science class inhibits critical thinking by preventing alternative views.

"Science is still pretty clueless about how life started," he said. "This is what kinda galls me, that students are being misled to believe that science knows more than it does."

Faith versus science

In the world of science, there is little controversy about creationism, Staver said.

"It's not established science," he said. "Scientists have a lot of weird ideas, but in order to pass muster they have to go through the social community process, let your colleagues examine it, crawl back to your lab, figure out if your criticisms are good."

But the ID proponents have been trying to cut in line, Staver said. "ID folks are appealing to a public that we know has a relatively low level of scientific literacy.

"They won't say it, but they want to recast the paradigm of science to include God within it," Staver said. Even though he is a staunch proponent of evolution, Staver doesn't dispute the existence of God.

"I accept evolution as a scientific idea and as a fact based on the evidence," he said. "My belief in God is based on my faith.

"It's bad logic to conclude that God doesn't exist when you never considered him in doing the work." But it's equally bad logic to conclude scientists reject God because a divine creator isn't a necessary part of scientific theory.

If Buckingham is successful, the Dover school district will be the only one in York County teaching intelligent design. Officials from other districts say teachers are prepared to discuss creationism if the issue is raised by students, but nowhere is it part of the curriculum.

But Dover Area School Board member Noel Wenrich says whether Buckingham will get support from the rest of the board depends on what he proposes.

Like Buckingham, Wenrich supports making "Pandas" available to students searching for other answers.

But he doesn't support the actual teaching of the textbook in class unless it's needed to balance the other books, such as Charles Darwin's "On the Origin of Species."

Wenrich characterizes the two arguments as “intelligent design” and “the primordial soup.”

And in the end, he said, faith plays a role in all our decisions, even in science. “You can call it faith, or you can call it exploring other opportunities,” he said.

Copyright © 2009. American Association for the Advancement of Science. All rights reserved.

Appendix 2

Statement to introduce evolution

The state standards require students to learn about Darwin's Theory of Evolution and to eventually take a standardized test of which evolution is part.

Because Darwin's Theory is a theory, it is still being tested as new evidence is discovered. The theory is not a fact. Gaps in the theory exist for which there is no evidence. A theory is defined as a well-tested explanation that unifies a broad range of observations.

Intelligent Design is an explanation of the origin of life that differs from Darwin's view. The reference book, *Of Pandas and People*, is available for students to see if they would like to explore this view in an effort to gain an understanding of what **Intelligent Design** actually involves. As is true with any theory, students are encouraged to keep an open mind.

The school leaves the discussion of the Origins of Life up to individual students and their families. As a standards-driven district, class instruction focuses on the standards and preparing students to be successful on standards-based assessments.

The administration will not comment on the issue, but according to a statement released by the district, both Assistant Supt. Michael Baksa and Supt. Richard Nilsen will monitor the instruction to make sure no one is promoting, but also not inhibiting religion.

SOURCE: *York Daily Record*, November 23, 2004.
Copyright (c) 2004 Bell & Howell Information and Learning.