

Chapter One

ARGUMENTS

There's nothing I like less than bad arguments for a view that I hold dear.

Daniel Dennett

THE IMPORTANCE OF ARGUMENTS

As I sit here at the beginning of the summer in 2008 I can remember several arguments that played very important roles in my personal and professional life. To go back just a few years, one of the most significant events in my career at Eastern was a move that some of my colleagues initiated to start a faculty union. Some of my closest colleagues, including some of my dearest friends, peppered me with arguments as to why I should join the union. Some other equally close colleagues, and equally dear friends, countered with arguments for why the union was a bad idea. Now, there was a great deal at stake here. For one thing, it was clear very early on that this was going to be personal for almost everyone involved. So, I was going to cement some friendships, but likely threaten others. But we were also debating the future of the institution I dearly love, and my and my colleagues' professional lives here. Needless to say, it was very important to me to figure out which of these arguments were the strongest.

Most of us not simply consumers of arguments, we are producers as well. Relatively early in the above debate I decided where I stood on the faculty union issue. As is my

went, I could not sit back and watch the union vote unfold before my silent eyes. I felt the need to enter this important debate with my colleagues. All of the sudden it was me putting forth arguments. All that had been important before still was, but somehow the stakes were higher. Now it was my name on the argument, there was a heightened sense, not just of ownership, but of personal and professional responsibility. I needed my arguments to be as strong they could be – not just convincing, but pointing to the truth.

This book is about arguments and a suggested technique for distinguishing good arguments from bad ones. These general hints are intended to be of use both when you find yourself in the position of the consumer of an argument, and must make some decision about the quality of its evidence, as well as when you are the producer of the argument, and desire to present the strongest evidence you can. I don't claim to have a magic bullet that will automatically show us the truth about complicated issues. But I think you will be pleasantly surprised at how often this technique proves useful for thinking through these issues, finding out where you stand, and even beginning the process of formulating your own arguments about them.

WHAT IS AN ARGUMENT?

One potentially misleading aspect of my example above is that when it came to the union, tempers were high. There is a perfectly fine use of the word *argument* that basically means a verbal fight. Joe and Sally got into a terrible argument about his failure to do his share of the house cleaning. That is not what we will mean by the term, however. Sure, there will be times when arguments are very important, and disagreements about their strength or weakness will touch our emotions as much as our reason. There will be many other times, however, where arguments are simply there for our consideration, and we can assess

them free of any passion or personal commitment. And, indeed as much as is possible, I would recommend trying to adopt the more dispassionate approach, even when you feel strongly about what is at issue.

It is useful to see an argument as complex arrangement of three quite different things. There will be what logicians call a **conclusion** – some theory, hypothesis, or position that the argument seeks to defend. There will be **premises** – facts, data, or evidence that argument uses to support the conclusion. And there will be a relationship between the premises and conclusion whereby the conclusion **follows from** the premises. We can schematically represent an argument as follows.

e₁. Premise
 e₂. Premise
 e₃. Premise
 ...
 e_n. Premise
 =====
 t₀. Conclusion

Let's begin at the bottom. Every argument will have a conclusion – that's part of the definition of an argument. When we put an argument in what we will be calling its **schematic form** it will always come at the end, under the double lines (sometimes just a single line). But in the real world of arguments we should treat the term conclusion as technical jargon. Conclusions don't always come at the conclusion of a person's argument. Sometimes they come at the beginning.

Dick's cheating on Jane. He told her he had to work late, but Sally saw his car at Joe's Bar. Not only that, he leers at other women, and

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INFERRING AND EXPLAINING

the last three times she called him he didn't answer.

Sometimes they come in the middle.

Charlie's take-home exam was word-for-word identical to Sarah's. Clearly, **Charlie copied it from Sarah**. The guy's a loser, never comes to class, and doesn't know how to write very well.

And, of course, some of the time they are at the end.

The light from virtually every galaxy is "red-shifted." This shows that every galaxy is moving away from every other galaxy. Therefore, **the physical universe is expanding**.

I have used the lower-case letter, t, in my schematic representation to stand for **theory**. The subscript, 0, is used to do two jobs. Although there is only one theory defended in the argument's conclusion (though, that single conclusion can be complicated and composed of many parts – "therefore, Jake did it, or helped plan it, or someone read his diary"), we will need to keep track of other possible theories besides the one defended in the argument. So in addition to starting a sequence of numbered theories, the 0 can be read as the letter, o, and standing for original – the original theory or conclusion in the argument.

To standardize things, we will use the lower-case letter, e, to stand for an individual bit of **evidence**. There are no set numbers of premises, or parts of the evidence, in an argument. Sometimes there will be just a single datum, and sometimes there will be quite a bit of supporting data. The examples above illustrate not just that conclusions can come

in many places in the statement of an argument, but that the same holds true the statements of the evidence.

Let's recast our schematized argument in terms of evidence for a theory.

e₁. Evidence (datum)
 e₂. Evidence (another datum)
 e₃. Evidence (another datum)
 ...
 e_n. Evidence (another datum)
 =====
 t₀. Theory

LOGICAL CONNECTION

We've said a bit about the top and the bottom in our schematic representation of an argument. What about those conspicuous double lines? In good arguments the conclusion **follows from** the premises; the evidence **supports** the theory. What exactly is this relationship of support or following from? That turns out to be a very controversial issue in both philosophy and mathematical logic.

In some cases the relationship is **semantic**. If we just understood enough about the meanings of all the words in the premises, we would see that the conclusion has to be true. Often the examples are pretty trivial.

e₁. The number is even.
 e₂. The number is greater than
seventeen.
 t₀. The number is not prime.

Other times, however, there's quite a bit of information hiding in the premises, and the conclusions are a little surprising and quite significant.

e_1 . The figure is any old plane triangle.

 t_0 . The interior angles of the figure equal exactly 180^0 .

Arguments of the above type have a technical name. They are called **deductive arguments**. In a successful deductive argument, the relationship between the premises and conclusion (it's artificial, here, to call them evidence and theories) is a very special one. Logicians call it **validity**. Valid arguments are ones where, **if** the premises are true, the conclusion **has to be true**. We will use a single line between premises and conclusions to indicated proposed deductively valid argument. Many colleges and universities have whole courses on deductive (or symbolic) logic. Very sophisticated techniques are developed for determining validity. We will not spend time reviewing this material because as interesting (and just plain fun) as it is, one almost never finds deductive arguments being put forward outside of academic philosophy and mathematics.

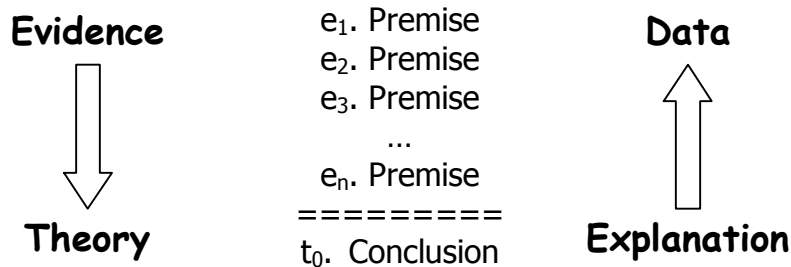
A second way of connecting premises to conclusions relies on the technical fields of mathematics and statistics. We cannot as conveniently ignore these arguments, since they play huge roles in contemporary science. Our approach to them, however, will be a little indirect. Rather than going through the basics of **probability theory**, and then developing statistical tests for making sense of numerical data, we will treat these arguments as special cases of **inductive arguments**. This jargon simply means that the argument claims that the conclusion **follows from** the premises, but **not** deductively. That is, it is possible for the

premises to be true, yet the conclusion can turn out to be false. Now, of course, it should be relatively rare that in good inductive arguments, the premises would be true, and the conclusion false, otherwise these arguments will not be very useful. It is a matter of great controversy in logic, philosophy, and even the sciences, as to how we describe this relationship between evidence and theories. The rest of this book is devoted to showing you one way of characterizing this relationship.

INFERENCE TO THE BEST EXPLANATION

Consider three of my examples above. We had purported evidence that Dick was unfaithful – the excuse about being sick, the car outside the bar, and missed phone calls. We had purported evidence about the copied take-home exam – the word-for-word identical submissions, Charlie’s chronic absences, and his failures as a writer. Finally, we had the evidence about the expanding universe – the red-shifted light for distant galaxies. In each of these cases, the suggested theory *explains* significant parts of our evidence. Charlie being a cheater doesn’t explain his bad writing, but it sure helps us understand how the two exams ended up being the same. Dick’s cheating (in a very different way) would explain why he was at the bar when he said he was sick. And an expanding universe explains the “Doppler shift” we observe in the light from galaxies.

This suggests a generalization. Suppose we treat the theory being defended in an inductive argument as an explanation of the data (at least some of the data) contained in the evidence. We get the following very symmetrical picture of an argument.



Inference to the Best Explanation assumes this general picture of inductive arguments. The relationship of ***support*** or ***following from*** becomes one of good explanation. Evidence for a theory is strong, or good, or sound if, and only if, the theory ***best explains*** the relevant data that is being offered as evidence. This definition of good evidence gives us a very useful device for testing purported evidence. That device is the subject of the next chapter. But before heading into all of this, let do a review exercise.

AN ARGUMENT OUT OF THE HEADLINES

The following article appeared in the New York Times, July 4, 2008.

July 4, 2008

Copying Issue Raises Hurdle for Bush Pick

By **ADAM LIPTAK**

WASHINGTON — As chief counsel to the Senate Judiciary Committee, Michael E. O'Neill helped steer the Supreme Court nominations of John G. Roberts Jr. and Samuel A. Alito Jr. through the confirmation process. An expert on judicial nominations, Mr. O'Neill later spoke with pride to a legal magazine about helping place "some difficult federal judicial nominees" onto the lower federal courts.

The shoe is now on the other foot. President Bush nominated Mr. O'Neill to be a judge on the Federal District Court here last month, and there are signs that his nomination might be a difficult one as well.

Last year, a peer-reviewed legal journal, the Supreme Court Economic Review, issued a retraction of an article by Mr. O'Neill in 2004. "Substantial portions" of the article, the editors wrote, were "appropriated without attribution" from a book review by another law professor. In addition, at least four articles by Mr. O'Neill in other publications contain passages that appear to have been lifted from other scholars' works without quotation marks or attribution.

Long passages in the 2004 article are virtually identical to the book review, which was published in 2000 in the Virginia Law Review and was written by Anne C. Dailey, a law professor at the [University of Connecticut](#).

For instance, Professor Dailey wrote: "Bounded rationality is not a refutation of the rational actor model; to the contrary, it attempts to fine-tune the model to take account of predictable cognitive limitations and biases. Despite occasional references to irrationality in the literature, there is nothing in fact irrational about bounded rationality."

Four years later, Mr. O'Neill wrote this, without quotation marks or attribution to Professor Dailey: "Bounded rationality is not a refutation of the rational actor model; to the contrary, it seeks to recalibrate the neoclassical model to take account of predictable cognitive limitations and biases. Despite occasional references to irrationality in the literature, there is nothing especially irrational about bounded rationality."

In an interview on Thursday in the dining room of his home in Chevy Chase, Md., Mr. O'Neill was contrite about the duplications, blaming "a poor work method." He said he often mingled research materials and his own work in a single computer file. "I didn't keep appropriate

track of things," he said. "I frankly did a poor and negligent job."

Mr. O'Neill, a boyish 46-year-old who wore jeans and a wrinkled blue button-down shirt, said he had never knowingly passed off other scholars' statements as his own. "So much of it is sort of dry and straightforward stuff," he said. "To me, it all sounds generic and plain. I didn't catch it."

Deborah L. Rhode, an authority on legal ethics at Stanford, said the retraction by the Supreme Court Economic Review was "extremely unusual" and amounted to "a textbook case of conduct that casts doubt on someone's fitness for judicial office."

"That's a serious form of misconduct in an academic career," Ms. Rhode said. "I would think it would be viewed equally seriously in a judicial career. In my judgment, that would be disqualifying."

In an interview, Senator [Arlen Specter](#), the Pennsylvania Republican who was chairman of the Judiciary Committee until last year, said he had known for some time about the questions concerning Mr. O'Neill's scholarship.

"I heard him out on it and put it in the balance of everything else I knew about him," Mr. Specter said. "I believe he is an excellent prospect for the district court."

"He was my chief counsel and staff director at a very difficult time," Mr. Specter continued, referring to the nominations of Chief Justice Roberts and Justice Alito, the withdrawn Supreme Court nomination of [Harriet E. Miers](#) and a host of legal issues, including civil rights, bankruptcy and asbestos litigation.

Mr. Specter said Mr. O'Neill's nomination "has been thoroughly vetted on a number of levels," including by the [Federal Bureau of Investigation](#) and the White House. "I was told it went to the president," he said.

Emily A. Lawrimore, a White House spokeswoman, said Mr. O'Neill had been "completely forthcoming" from the start of the vetting process and had "expressed remorse for his actions."

"He was highly recommended to President Bush," Ms. Lawrimore said of Mr. O'Neill, "and the president is confident he will make an excellent judge."

Friends and colleagues describe Mr. O'Neill as a creative, fair and exceptionally able lawyer. He is a graduate of [Brigham Young University](#) and Yale Law School, and he served as a law clerk to Justice [Clarence Thomas](#) on the Supreme Court and Judge David B. Sentelle of the United States Court of Appeals for the District of Columbia Circuit. He is working on a master's degree in writing fiction.

The flawed 2004 article was not an isolated incident. Passages in the other articles by Mr. O'Neill, now an associate professor at George Mason University School of Law, also bear striking similarities to other scholars' work.

Shown a copy of a 2000 article by Mr. O'Neill in the Brigham Young University Law Review, Gerald M. Caplan, a former Justice Department official and former dean of the McGeorge School of Law in Sacramento, said it included a verbatim reproduction of a passage from a 1985 article he wrote in the Vanderbilt Law Review. Mr. O'Neill did not quote or cite Professor Caplan.

"Well, he's got me word for word," Professor Caplan said.

"And there is some evidence that it's not innocent or inadvertent," he added, referring to the nature and extent of the duplication.

"It shows him to disadvantage," Professor Caplan said. "If I were on the Judiciary Committee, I would want to know more."

Similarly, parts of a 2000 article by Mr. O'Neill in the George Mason Law Review bear a striking similarity to a 1997 article in the Michigan Law Review by Neal Kumar Katyal.

Professor Katyal, of the [Georgetown University](#) Law Center, said he knew Mr. O'Neill and admired him.

"Mike is an innovative thinker and has always had integrity in my many dealings with him," Professor Katyal said. "I can't imagine that he would intentionally copy this banal point from my article."

Daniel D. Polsby, an editor of the Supreme Court Economic Review and the dean of the George Mason School of Law, said he had learned about the similarities to the book review in a letter from its author, Professor Dailey. (Professor Dailey declined to comment.)

"It was my opinion at the time that this was negligent behavior," Dean Polsby said, "and he was duly chastised. The idea of O'Neill committing a theft is just impossible. It's just impossible."

But the law school and Mr. O'Neill agreed that the lack of attribution in the article would have serious consequences for him as a law professor. "By agreement, by a handshake," Dean Polsby said, "he stepped away from tenure and will reapply for it."

Mr. O'Neill said the law school's investigation concluded that his conduct had not been willful.

"The range of possible sanctions was a hug and a cookie to firing you," he said. "They felt like it was a significant mistake on my part. They didn't think it was intentional."

Asked how he would have viewed a judicial nominee like himself in his old job on the Judiciary Committee, Mr. O'Neill answered elliptically.

"I've tried to have a decent reputation with people," he said. "It's certainly my fault. You'd like to be not just defined by the mistakes that you make in life."

You've sat down for a big family dinner. Your very political cousin starts the conversation by telling you all that President Bush's nominee for the Federal District Court is in trouble because he plagiarized a law journal article. You're a little skeptical, and challenge your cousin by asking her what evidence she has for this serious charge. She responds by saying, "I read it in the New York Times." You go on line and find the above article. Does the information in this article provide you with good evidence that Mr. O'Neil is guilty of plagiarism? The next chapter is intended to give you some tools for answering a question like this.

Before we get into it, let's do a quick review of the stuff we covered in Chapter One. Before reading further, take a minute and see if you can put the most significant data from this article into an argument for the conclusion that Mr. O'Neil is guilty. At this stage you need not be distracted by whether or not the article itself is arguing for this conclusion, because it's your cousin's argument you're going to be analyzing. Also, since the article is pretty long, for this little exercise, why don't you limit yourself to say, four or five of the most significant bits of data it contains? Obviously, you should include anything that significantly helps or hurts your cousin's hypothesis.