I Smashed

Guest: Gerard Casey

WOODS: All right, we've had some demand for an episode on this, so what I did was I went to my Supporting Listeners Facebook group — SupportingListeners.com, by the way is how you get in there. If you enjoy this program and you're not there, your life is unfulfilled, so SupportingListeners.com — and I asked them what they would want covered on such an episode. Now, you do cover logic for us in a course at Liberty Classroom — so LibertyClassroom.com — but here we're just going to go through a list of fallacies, some of them are formal, some informal. And maybe you can distinguish at the beginning here what the difference between those two things is?

CASEY: Yeah, absolutely. This is going to sound somewhat paradoxical, but the thing about formal fallacies is that they are always fallacies. It doesn't make any difference who is speaking or what the circumstances are or the material that you're dealing with. When it comes to informal fallacies, they're not always fallacies and that's why they're informal, because it depends on what you're talking about, and therefore, the material makes the difference.

So if we can give some examples as we go along, I think this will become obvious. So let me take an example of a formal fallacy. So there's a fallacy which has the resounding name denying the antecedent. Now, what is this? Well, this says if you've got two propositions, and one of them is an if-then — so if one thing, then another; if A, then B, so you have a condition and then you have the consequent; if A, the condition, then B, the following — and you generate another proposition somewhere else — wherever it is, whatever it might be, that's the negation of the condition, in other words, not A — a lot of people are inclined to conclude: therefore, not B.

So for example, suppose we had a proposition: if you're Irish, then you're European. That seems clear enough. When somebody says, "Well, you're not Irish, so you can't be European," well, that doesn't follow, because of course, you can be French or English or whatever it might be. So that would be a formal fallacy, and it's formal because the structure is such that no matter what you put in place of the As and Bs, if you have *if A then B and not A*, and you conclude *not B*, it's always going to be invalid. It doesn't make any difference what you're talking about.

Another one would be there's the sort of reverse fallacy, which is called affirming the consequent. And again, suppose this time it goes *if A then B*, and then you assert B and therefore you conclude *therefore A*, that's invalid. So let me give you an example of that one. Let's suppose we have something called Prince. So we say if Prince is human, then he's a mammal. And then we say, well, he's definitely a mammal, so he's human. Well, no, because Prince could be a dog. So that's another example of a formal fallacy.

So here's another one. Let's say somebody said, "Somebody must have dropped the TV remote control." And you go, "Why?" Well, they say, "Well, look, if you drop a TV remote control, it stops working, and since it stopped working, then somebody has dropped it." And that doesn't follow, because somebody could have hit it with a brick or a hammer or thrown it out of a plane. Who knows? So those are all fallacies relating to what's called proposition logic.

Then there are also a whole bunch of fallacies relating to Aristotelian logic, and the classic one, of course, is the undistributed middle. Again, big name, but it's a very simple one, and it

goes, let's suppose we had something like *Nazis embraced eugenics* as one proposition, and then let's suppose we had *Leading thinkers and politicians in the liberal West also embraced eugenics*. So we will then conclude leading thinkers and politicians in the liberal West are Nazis. Well, that might be true, but it doesn't follow from the two propositions we've just given. So those are examples of formal fallacies.

WOODS: Okay, now, as you said in your course, it's quite possible to go through your life being a very effective debater and to present views that you hold very skillfully without ever studying formal logic. You don't have to know these things. So why should people bother?

CASEY: Well, just like anything else. Okay, so some people, say, are sort of naturally kind of gifted musicians. They can kind of pick up the piano messing around on the keyboard. But somebody once said the cheapest kind of experience is somebody else's. So when you learn from other people, you can accelerate the process by which you learn. You can also improve the way in which your natural talents find expression. So a little bit of formal study — formal study here doesn't allow you to, as it were, acquire skills which you didn't have at all in any respect, but it does require you to sharpen and hone skills that you already have, and also to use them more reliably. So there really is an advantage to studying it a little bit formally.

WOODS: We have a list here that I sent you, taken from my private group, that I think we'll just go through one after the other. But looking them over, what would you say would be one of the ones that you encounter the most or is one we most need to address?

CASEY: Oh, that's a good question.

WOODS: Because, geez, non sequitur is a big one, *post hoc ergo propter hoc*. I mean, there's a lot.

CASEY: Yeah, well, *post hoc ergo propter hoc* comes up, that's, in other words, *after this because of this*, and I'll talk about that in a second. Usually people think of that in terms of what they call the correlation-causation fallacy. I don't know; they all come up. If I can sort of give you an image — think of it this way. If you look out the window at your automobile and you see it there gleaming in the sun, there's only one way it's perfect, but there's a million ways it can be imperfect. It can get little dings or bangs or the fender benders or whatever it might be. So fallacies, if you like, represent all of the ways in which our reasoning can go wrong. And I wouldn't go so far as to say it's infinite, but it's certainly a very large number of ways. And so if you wanted to go through these, we can we can talk about them, and then if there's one there that sort of tickles your fancy more than another, we can spend more time on it.

WOODS: Well, let's do — let's see. Is there any one of these that you think is — well, to heck with it. Let's just start going through them.

CASEY: Yep.

WOODS: Let's start with a genetic fallacy, because when you hear that name, you actually have no idea what it means.

CASEY: You think it has somebody to do with, I don't know, with — what would you think of it?

WOODS: DNA or something.

CASEY: Yeah, Darwin or DNA or something. No, it really is — okay, in the sense, this is one of the sort of newer ones. And there's actually — first of all, there's no agreed typology of these fallacies. In other words, if you — I've given you a list of several books here, which you might give to your listeners, but if you go there, you'll see that there are different lists. But there are some that everybody agrees on, but even here, the terminology, the name given for it sort of differs. So there's no point in your listeners getting fixated on one name for one particular kind of fallacy. The important thing is to recognize the inappropriate nature of the reasoning, whatever you think of it in terms of names.

So the genetic fallacy is a kind of an ad hominem fallacy. And the ad hominem fallacy generally is where you are more concerned with the person who is putting forward the argument and what you consider to be their defects rather than the actual argument itself. And there's two basic forms of ad hominem fallacy. I'll come back to the genetic fallacy in a second. One is completely irrelevant, where somebody says, you can't say that, or you're not entitled to hold an opinion on that, or that's false because you are A, and then you fill in the blank. This is extremely common. You see this all the time if you watch YouTube.

So for example, men are supposed to be not allowed to talk about any women's issues. So if you're a man, for example, that's somehow disqualifies you from having a position on abortion. And that, of course, is nonsense. Obviously a man can't experience it — well, at least not unless you're transgender. But the point is that what you're talking about here is the morality of the procedure, and you're not talking about experience. Obviously a man can't experience it, but a man can have a view on it one way or another. Or you can't have an opinion on football because you're a woman. I mean, that's obviously ad hominem or ad feminem in this case. It's dismissed.

The other one, this one is where it's not always a fantasy, and that's where somebody is putting forward a proposal — so let's say somebody puts forward a proposal to support extensive roadworks around your town. And this person turns out to control the local quarry where all of the material is going to come from. You might suspect that his support for this project is more than a little self-interested. And it might turn out that this is a perfectly valid proposal, and indeed, anyone should support it, and it just happens to be the case that this person owns the quarry and will be supplying all of the stone and all of the rest and making a lot of money. But where that's the case, then, while it would be invalid to conclude necessarily that what the person is saying is self-interested and probably false, it would be obviously, it seems to me, wise to look at the proposal with several grains of salt. So that's how the ad hominem works.

Genetic fallacy is a variation of the ad hominem, then, because it looks at the source. It asks where does the idea come from, and that's where you get the genetic stuff. And if the genesis, the source of the idea is disreputable, then the idea must be disreputable too. Let me see if I can think of an example. All right, okay, Mussolini and fascism, of course, were famous allegedly for making the Italian trains run on time. Okay, everybody sort of knows this as a trope; whether it's true or not is irrelevant. So suppose you were an employer and your workers were a little bit unpunctual, and they reply to you, "Punctuality, schmunctuality. Who are you, Mussolini?" that would be the genetic fallacy [laughing].

WOODS: All right, okay. I'm sure we'll have some other amusing examples to come. Let me switch to — well, what about *tu quoque*? Is that always a fallacy? Is that a fallacy necessarily?

CASEY: Well, again, like most of the fallacies, not necessarily. All it means in Latin is just *you too*. So somebody says something or makes a proposal or makes a criticism, and then the response is, well, you did the same thing, or you supported this policy when your man was in power. So the sort of valid use of *tu quoque* is a claim of inconsistency. So let's say, Senator Thompson, you're talking to him, and you say, "You're very vocal in condemning the President's foreign policy, but I don't remember you being quite vocal when the President from your party proposed exactly the same policy." That would be *tu quoque*. Now, the fallacious side of it comes in because, of course, somebody's perfectly free to change their mind. What they're not free to do, of course, is to change their mind without ever telling anybody. And of course, if you're changing your mind every five minutes, well then, one would begin to wonder just how much of a mind you've got.

So *tu quoque* basically says *you did it too*; in other words, you're being accused of malfeasance in some way by X, and you say to X, "Well, I'm sorry, but you're doing the same thing." So commonly we might think of this as the *two rights don't make a wrong*. So if what you're saying about me is true, and I say it about you, it may well be the case the behavior of

both of us is actually reprehensible. But it's very common. I mean, all that one has to do is go on YouTube or watch the TV, and you will see politicians engaging in this form of argumentation regularly.

WOODS: I want to talk about *post hoc ergo propter hoc*, because this is one that in economics in particular we run into all the time, partly because there's so much going on in the economy, and you change one thing, but the problem is you can't change just one thing. So let's say you introduce one government program, a minimum wage law, and employment actually goes up. And people say, *Ah ha, the minimum wage law makes employment go up*. But that's not so. But to the average person who just looks at it and doesn't think deeply about it, it seems true. So talk about that one.

CASEY: Yeah, this is a really important one, and the Latin means *after this, therefore because of this*. I think maybe your listeners might be more familiar with this in terms of the expression, correlation doesn't imply causation or doesn't necessarily imply causation. So to take your example here, suppose two sets of phenomena are correlated, whatever it might be, a policy and, let's say, some outcome; a policy of, let's say, raising the minimum wage, and then we have a rise in employment.

Now, the question is how are these two related. And there are four possibilities. One is they're not related at all. They've got nothing to do with each other. It's purely coincidence. The second possibility is the first one actually causes the second. So the introduction of the minimum wage actually produced greater employment. The third one — not in this case, because obviously, the policy change took place before the particular result — is that the second phenomenon caused the first. And the fourth possibility is that both of these, the change in policy and the outcome, the rise in the employment, are the product of some other factor which has yet to be determined. So those are the only four possibilities.

When you're dealing with something like economics where there are multiple things going on, I mean, you would then you're back to *Étienne* de La *Boétie's* idea, which is, when you're looking at practical matters, you have to look at not only what's seen, but what's not seen. And so therefore, it's open to somebody to say, if presented with this — let's say you're an Austrian economist, and the minimum wage is raised and unemployment actually goes up. And somebody says, Ah ha, here's one of your little pet peeves, and it's been shut down, because we can now demonstrate that if you raise the minimum wage, employment goes up. And it is perfectly open to you to say, Hang on a second. We don't know what would have been in the situation if you actually hadn't increased the minimum wage. You might have actually had even more employment, because there are other factors that enter into the situation of employment, like the overall state of the economy — who knows? There are multiple factors that could explain it.

So yeah, so that's the thing. So correlation doesn't necessarily imply causation, but it does suggest to most people that if you have correlation between two sets of events, it's a good place to look to see if there is any connection. Let me give you an example I think most people will find amusing. In his book *The History of Animals*, Aristotle, many, many years ago, obviously, two and a half thousand years ago, noted that when it comes to the sex of reptiles, many more of one sex are born when the wind blows from a certain direction. Now, everybody thought this was hilariously funny and that Aristotle kind of lost the plot. Well, it turns out that the sex of reptiles is what they call a temperature-dependent entity, and of course, the ambient temperature depends, partly at least, upon the direction in which the wind is blowing. So Aristotle was perfectly correct in his empirical observation; he just didn't have the theoretical knowledge to connect the two events. So what he had was correlation, but he wasn't able to come up with an explanatory account which would actually link the two together causally.

WOODS: Well, this is one I guess we're just going to have to struggle with forever in economics.

CASEY: Yeah.

WOODS: There's just no — because you're not going to get people to think about epistemology in economics.

CASEY: [laughing] No.

WOODS: You can just forget about that.

CASEY: Absolutely.

WOODS: Let's talk about one — because I had not heard of the fallacy of the average before. Is that one that — well, first, what is it, and second, is it relevant to us?

CASEY: Well, it is, and you often get it in the context of what I call fallacy by anecdote. Suppose you're talking about some social policy. Suppose you're a conservative, as I am, and you're saying, generally speaking, marriage and two-parent family is the best way of providing for the next generation. Invariably, somebody will say, "I know a single mother. She's heroic. Her children are wonderful. They're all marvelous, and there are lots of families in my neighborhood where they have two parents and the children are awful," and so on and so forth. [laughing] And so you're supposed to fall down in the heap when you get this, right?

And so my answer to this is always that the best of the worst is always better than the worst of the best. So what we're talking about here are averages, types or kinds; we're not talking about individuals. Let's take another example of that maybe a little bit more perspicuous. If you went to most people and said, "Do you think men are taller than women?" The answer would probably be yes. And then if you said, "Ah ha, here's Rebecca. She's on the women's basketball team for the university and she's six foot two. And Tom here plays for the hockey team, and he's four foot six. So she's taller than he is, so what does that do with your statement that men are taller than women?"

And the answer is, of course, when you say men are taller than women, you're not making the claim that every man is taller than any woman. What you're saying is if you put them on the scale, you would find that all of the tallest people in the world are men, and then you wouldn't have to come down very far before you find women, right? And then in most of the cases, there's plenty of overlap. It's not shortage. So the fallacy of the average is using information which is perfectly germane, perfectly to the point when it comes to talking about the averages and then applying it to some specific individual without actually making the empirical inquiry that would be needed in order to figure it out. A fallacy of the average would be if you simply said, here's Tom. Tom is a man. Men are taller than women, so I can now tell you without actually looking at any evidence that Tom's going to be taller than any woman. And that, of course, is nonsense.

WOODS: Well, I appreciate — thanks for using Tom as the name of the guy who's four foot six.

CASEY: [laughing] I'm sorry. Sorry about that.

WOODS: That's okay. You're just irritating an insecurity I have, but that's perfectly fine. All right, let's see what else we've got here. What's the false dilemma?

CASEY: Okay, false dilemma is where you say — again, this is very common in political debate, where very often two positions are being put forward, A and B. Okay, so you're looking at your opponent's policy and you say to them, Look, if you do A, you're going to get awful results, and if you do B, you're going to get even worse results. And since these are the only two possibilities, whatever you do, it's going to be awful. So it's a false dilemma when in your presentation of the data or whatever is under consideration, you reduce the number of alternatives to two when there may in fact be more.

Okay, so let's see if I can come up — all right. Let's take the current discussion that's going on in the Democratic things going on, looking for a candidate. So let's suppose somebody said Bernie Sanders is against capitalism, so he must be communist. Oh, all right, well, if you're

inclined not to support Bernie Sanders, this may sound very persuasive to you. But of course, that would only be true if capitalism and communism were mutually exclusive and universally exhaustive. In other words, they were the only two possibilities, one or the other, and nothing in between. But of course, in between the two, there's a whole range of positions, ranging from something that's pretty close to capitalism, but not quite, sort of. And then something that's not quite full-blooded communism, maybe socialism of one kind or another. So there's a sort of a range where the political positions line up more or less on a spectrum with, say, capitalism at one end and communism at the other. And so therefore, to present it as if it was either one end of the spectrum or the other end of the spectrum, and since he's not one he's got to be the other, that would be an example of a false dilemma.

Here's another one. The philosopher Antony Flew famously was an atheist for almost all of his life and wrote on this. I can remember reading a book that he published in 1955 with Alasdair Macintyre and he had articles on that. Towards the end of his life, he actually accepted the argument that God existed and he rejected atheism. So you might conclude from that, that if he was not an atheist, he must be a theist. But he wasn't. He didn't accept theism. Because of course, there's another position, at least one other position, which is deism. In other words, which thinks that there can be a God, but that God isn't necessarily the God of Abraham, Isaac, and Jacob, that God is some kind of more or less abstract principle responsible for setting the world in motion, and then basically somebody who goes on a long holiday leaving it to work its own way out. And so towards the end of his life, he was no longer an atheist, but he wasn't a theist either, and to present those as the only two possibilities would be an example of a false dilemma.

WOODS: All right, how about one that annoys me because it's used in colloquial speech, usually incorrectly, and that is —

CASEY: [laughing] Begging the question.

WOODS: — begging the question. Yeah, so let me set this up, because people who listen, some of them know this drives me crazy. If you're sitting down to eat, and then you get up, and you come back and your food is gone, and your dog sitting in the corner looking pretty satisfied, you could say: well, this begs the question, did the dog eat my food? No, it does not. Stop. That is not what begs — "begs the question" does not mean, as a result of this situation, a question urgently presents itself to me. No. It means that basically your question assumes in the very forming of the question the very thing that is to be proven, or some major aspect of the — so in a way, "When did you stop beating your wife?" is kind of begging the question, isn't it?

CASEY: Yeah, that's the fallacy of the double question, but as I said, all of these things are —

WOODS: Oh, I love that. Okay, hold on. Go back. Did I miss — wait, what's that?

CASEY: It's an example — so when you say, "Have you stopped beating your wife?" there's a presumption in that question that you have been beating your wife, so whether you say yes or no, you're granting the assumption. I came across this — I can remember the late Roger Scruton, God rest his soul, I invited him to UCD back in the 1980s.

WOODS: That's University College Dublin.

CASEY: Yes, when he was in his 40s, and I had never met him before. So he gave a talk. We had this endowed lecture series, and he came, and so he gave this talk, and he was very controversial at the time. And when he finished — the place was full. There must have been 600 people there — this woman stood up and said, *Blah, blah, blah, first world, and blah, blah, blah, second world, and blah, blah, blah*. She went on for about five minutes. And then she stopped. And then there was a pause of about two seconds and he said, "Madam, I do not accept the presupposition of your question." [laughing] That was it.

WOODS: Oh, that's awesome.

CASEY: It was awesome. Yeah, it was absolutely brilliant. And I thought, well, what was he saying? He's saying, look, if I was to engage with you — I mean, if you parse it out, he was saying, if I was to engage with you, we'd have to back up the truck and figure out what it is that you're assuming, in other words, just to give point to your question, and then probably back it up even further, and that's where we would then have our conversation. But in order to do that, I'd need to spend the next 15, 20 minutes, and I have just haven't got time for that. So that's it.

But anyway, coming back to begging the question, I've given up on this, Tom, because it's so entrenched. The misuse of the phrase is now so entrenched, when people say, "This begs the question," when they mean *this simply gives rise to a question*, that if you use "beg the question" correctly, you're going to be misunderstood.

WOODS: Well, here would be a way, something like — and I know. I'm still fighting it. I'm still fighting it.

CASEY: Yeah, good for you.

WOODS: I'm not giving up. But it'd be something like, "Why has Castro's Cuba been so successful?" Well, that begs the question that it has been successful, so I can't even answer that question.

CASEY: Again, I wouldn't regard that exactly as begging the question because —

WOODS: Oh, love this. By the way, by the way, I love this. I love that I'm slightly being put in my place after all the years of lecturing people about this. This is great for me. I need this to happen [laughing].

CASEY: No, but I mean, that's the Scruton point. Think of it as Roger Scruton's fallacy; I mean, not one that he committed, but one that he pointed out, where it is that when somebody says to you, "Okay, okay, Woods, you explain why Castro's Cuba has been so successful." So what they're doing is they're assuming, in putting that question to you, a proposition that communism in Cuba has been successful, and you have to say: I'm sorry, but your question actually presupposes something which you haven't argued for, and so if you want to argue about that, then you need to provide support for it., so let's go back and do that. In a way, as I said, many of these things are linked, and it's a kind of begging the question, but it's not the most obvious example of it.

WOODS: All right, give me a good one, because I could come up with good ones, but not off the top of my head right now.

CASEY: Okay, let me give you an example of begging the question. If I say something is true, and you say why, and I say, "Because it's true," that's clearly begging the question, right? I mean, that circle is so small, it simply reduces itself to a point. But the way it comes about in actual practice is when people make the same point using different language. So for example, suppose I was a social justice warrior, and I said, "Social justice requires a high minimum wage." And you said, "Why is that?" And I go, 'Well, it's only right that people on the bottom of the earnings ladder have a legally supported high-wage safety net." And you go, "Hang on a second. That's just the same thing again. You've just said it in two different ways. You just said it twice.

WOODS: Right, right. Right, right, right.

CASEY: So that begs the question.

WOODS: That begs the question.

CASEY: Yeah.

WOODS: All right.

CASEY: But it's harder to see that one because it sounds different. And very often, by the way, this comes up — getting somebody to realize that they are making an unjustified claim as a presupposition to the question that they're asking is one thing, but it's much harder to pick up begging the question when it's a matter of somebody making the same point in different language. And that's very hard to do. When I was teaching this in regular university, only the better students, when I gave an example, would pick up on this point.

WOODS: Given the amount of time we have, let's go on a kind of a lightning round for the other ones.

CASEY: Okay.

WOODS: So the *argumentum ad populum*, like you're arguing on the grounds that a lot of people believe such-and-such thing. Somebody recommended that that we cover that, but I'm not sure what there is to be said about that, because obviously if I say Bernie Sanders must be right because look at this big army of young people he has supporting him, everybody instantly, even Bernie people would recognize that's not valid.

CASEY: Yeah, pretty much. Pretty much. To vulgarly put it, it's a kind of *50 million Frenchmen can't be wrong*. To which the answer is: oh, yeah?

WOODS: [laughing] Yeah, exactly. You're darn right. And likewise, the argument from authority, well, again, I don't think that there's a whole lot of discussion we can have about that.

CASEY: Well, this is a bit more subtle, because here —

WOODS: Oh, okay.

CASEY: Yeah, the argument from authority is actually valid on occasion. It just means that your authority has to be an authority in relation to the topics you're dealing with, right? So for example, if you were a garage mechanic, for example, when you're paying the astonishing bill for repairing your car, when he says, "I think housing prices are likely to increase significantly in the short term," you might say, "Oh, that's very interesting." But unless this guy is actually practicing as a realtor in his spare time, or an economist and so on, there's no reason to think he has any special expertise. If he tells me that my card needs such-and-such, then I'm much more inclined to believe him, because that's the area of expertise.

So that's the point. So I mean, if somebody is clearly not an authority related to the topic you're dealing with, then what they say has no more standing than anybody else. It may be true, it may be false, but there's no particular standing. If somebody is an authority in the area, then it depends on the area you're dealing with. So for example, if it's in mathematics and the question has to do with some sort of a normal, non-controversial aspect in mathematics, and I — so for example, I'm not brilliant on statistics, so if something complicated comes up in that area, I ask one of my colleagues who is. And if he tells me this, then I take it that that's the case, because he's an expert in that area and I'm not.

But there are many areas in economics — standard economics is one of them — where people who are purportedly experts in the area can give wildly different judgments in regard to a particular set of phenomena. And here, it's not enough simply to rely on somebody being an expert in an area — sorry, on that person, even when that person is supposedly an expert in that area. So sometimes it's completely void, sometimes it's perfectly in order, and sometimes it's a material fallacy and therefore depends on what you're talking about, what the subject is, and who the expert is supposed to be.

WOODS: Okay, all right, so that one — okay, I see the difference there. How about this one? There are a bunch more we could do, but we'll wrap up with: what is the appeal to ignorance?

CASEY: Oh, yeah, I love this one. This comes up so frequently. It comes up particularly when you're talking about whether or not there are extraterrestrial intelligent beings. So somebody will say something like, 'There has to be intelligent life somewhere in the universe,

somewhere else" — begging the question, by the way, or raising the presupposition that there's intelligent life on planet Earth. But anyway, that's another point. And you just say, "What's the evidence for that?" And they go, "Well, nobody has proved that there isn't." And you go, "What?" [laughing] Okay.

I actually had this come up in the discussion I had with the Richard Dawkins about 12 years ago when he had his book *The God Delusion* come out. And he had a proper passage, I can't remember it was, around page 48, where he had said something like, "It's very probable" — those were his words — "that there are intelligence or intelligent beings in the universe." And because the conversation had been about probability and evidence and so on, I said, "What's your evidence for that?" And that stopped him in his tracks. And he said, "What?" And I said, "Well, what's your evidence for that?" I said, "You didn't say it's possible, because clearly it's possible. You said it's very probable. And when you say something is probable, generally speaking, people think you're saying more than 50%, very probable, even higher than that. So if you're going to make that kind of claim, what kind of evidence can you produce? And it's not enough to say it's possible." And then the cameras stopped rolling and left him there sort of going with his jaw moving up and down.

So the argument from ignorance goes something like, *Well, there are ghosts*. And you might say, Well, why are there? *Because nobody's proved there aren't*. Or vice versa: there are no ghosts, because nobody has proved that they are. So the general point here is that, if our proposition or our statement is true, if it has been proved true, it doesn't follow that all that is true has been proven. In mathematics, for example, we have the famous Gödel's incompleteness theorems, where he says that in any formal system, there are true propositions which are unprovable within that system. So another example of this would be — this comes up in another form in the phrase — you might have heard it. I'm sure some of your listeners have — where he says, "Absence of evidence isn't evidence of absence." Are you familiar with this, right?

WOODS: Sure.

CASEY: Well, yes, in general, but hang on a second. It depends on what you're talking about. So if the question or the discussion is whether there's an elephant in your living room, then absence of evidence is evidence of absence. I mean, it's a finite space and an elephant is a very large entity, so if you go into your living room and there's an absence of evidence, that is actually evidence of absence. So once again, it's a material fallacy, and it depends. But by and large, this is one of the informal fallacies that kind of moves more toward kind of the formal end, so you always have to be very careful. if somebody says, "Well, you can't say that because it hasn't been proven," you say, "Well, something can be true without necessarily being proven," and vice versa. So these are ways in which people attempt either to short circuit an arguments so as to take the ground out from under your feet so you can't object to what they're saying, or vice versa.

WOODS: Wow, all right, I don't know how many we covered in this amount of time, but that was a decent amount. Now, if people want the formal logic stuff that I think is very elegant and beautiful in its own way — and if you taught it for 30 years, I assume either you also think so or you probably hate it and never want to talk about it again. I'm not sure where you stand, but I think it's beautiful and elegant — then you'll want to check out LibertyClassroom.com —LibertyClassroom.com/coupons has little discount codes you can use — and take Professor Casey's course. So we're going to get you back on. Let's not disclose to people the topic of your forthcoming book because it's a juicy one. We'll get you on sometime in the next month, March 2020, to talk about that.

CASEY: All right, very good, Tom. Excellent.