



## Opinion Science Podcast

*Hosted by Andy Luttrell*

### **Inoculating Against Persuasion with Josh Compton**

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#### **Andy Luttrell:**

In 1492 Columbus sailed the ocean blue. I learned that little rhyme in elementary school. You might have too. But I'm proposing a new stanza to the poem. In 1492, Columbus brought measles, smallpox and flu. Before Columbus arrived in the new world, these diseases were not already hanging out here. But European travelers carried these viruses from their homelands and over years of exposure, those Europeans had developed immunities and other protections against them. But Indigenous people had never been exposed to them. Their bodies had not built up any antibodies. The consequences were horrific. With no defenses against these new illnesses, they were able to tear through this population, killing an estimated 90% of Native Americans.

In 1633, a smallpox epidemic in New England resulted in native populations dropping from 16,000 to just 3,000. Now, there are plenty of other factors underlying the long history of disease spread among Indigenous people in the U.S., but one prevailing explanation for what was happening around the time of Columbus is the notion of so-called virgin soil epidemics. If a community has not developed any defenses against a virus, it's able to cause enormous damage. But one of the incredible innovations in medical science is the vaccine. As you may know, many vaccines work by introducing a tiny bit of a virus into the body. Not enough to make you sick, but enough that your body's immune system notices and starts to build its defenses. Because there's so little of the virus, your body has the luxury of figuring out how to successfully get rid of it without putting your life in danger. Then, if the virus ever comes around again for real, your body knows how to deal with it.

So, like what, is this a medical podcast now? No. The whole idea that bodies need to build up some defenses in order to ward off future attacks has served as a metaphor for an intriguing idea in the psychology of persuasion. And by the way, I acknowledge that we should be way more concerned about the devastating consequences of physical viruses than about the kinds of persuasive messages we often study in psychology. The enormous toll taken by viruses that a population isn't ready for is tragic. It's the biology that allows for susceptibility and resistance to these illnesses that got a guy named Bill McGuire in the 1960s thinking that maybe people have a hard time defending their views because they just haven't had opportunities to build up defenses. And maybe people can become more resistant to persuasion by getting what is in essence a persuasion vaccine, a mild dose of persuasion that would help people build up their defenses for the day a really strong argument comes along.

You're listening to Opinion Science, the show about our opinions, where they come from, and how they change, and how we prevent them from changing. I'm Andy Luttrell, and this week I talk with Josh Compton. He's an Associate Professor of Communication at Dartmouth and he studies what McGuire first sketched out those many years ago. It's called inoculation theory and it's a compelling way to think about how people are able to resist persuasion. He'll give us an overview of what inoculation theory is, how his research has extended it in new ways, and what it could mean for combating misinformation online.

The notion of inoculation strikes me as so funny because it's just this giant metaphor and it's a metaphor that just keeps getting extended, and it doesn't seem to be breaking, even though I think you'd probably say that we don't actually truly think that biologically the same thing is happening when people get a vaccine. And yet the premise of inoculation and vaccination from a biological perspective keeps showing up in how we can think about people's resistance to persuasion. So, just to get us started, what do we mean when we say that there's an inoculation effect when it comes to persuasion?

**Josh Compton:**

Right. I'm glad that you started with the metaphor, Andy. That's one of my favorite parts of this theory, actually. I can remember as a beginning grad student, 20-plus years ago, finally finding a theory where if you say its name, you understand it, and you've explained it, and that was so appealing. Right, so the idea of inoculation is built on this metaphor. It was first introduced and named that by the social psychologist, William McGuire, in the early 1960s, and the idea was exactly what it sounds like, that we can be inoculated against persuasion and other forms of influence in much the same way that we're inoculated against viruses and other antigens. And that's through pre-exposure to a weakened version of that threat, of that virus, or of that antigen.

We could stop there and say that that's a nice, simple heuristic for understanding inoculation theory, or thankfully, at least in terms of my career and my research program, we can stretch it a bit further. In fact, we can stretch it as you were saying a lot farther, right? And we can get into the different parallels of this weakened exposure, pre-exposure to threats, and how that works with persuasion. Some of the fun connections are, we know from a lot of conventional vaccines, medical vaccines, that you need about a two-week delay between the inoculation and the attack to have the full, robust protection, and in a lot of inoculation research, we find the same thing. About two weeks is what we need for counterarguing to reach a robust level and to have optimum resistance to influence.

We can look at things like the earliest vaccines. If we're talking smallpox vaccines, how they were originally spread from person to person by people passing them around, like passing around the actual smallpox vaccine, and with the word-of-mouth inoculation, we're finding something similar there too. A lot of how inoculation spreads, it's not just the direct message recipient. It's spreading along social networks. It's spreading through word of mouth much like the early vaccines were actually spread.

Some of the early research found that you get a better vaccination experience if you're getting it from a credible doctor, and we're finding that with inoculation, too, right? It's going to work a lot better in terms of resistance if the source of that inoculation message has high credibility.

**Andy Luttrell:**

Have you found that you're learning more about the medical science of vaccines than you ever expected? In reading your stuff, I'll read these references where it's like, "Oh, and here's a little trivia from the history of inoculation in biology," because it fits in. So, not the typical activity of a comm scholar.

**Josh Compton:**

I absolutely love that part for so many reasons, and one of them is because my mom's fond of introducing me to her friends as, "This is my son, the doctor who studies inoculation, but not a real doctor, and not real inoculation." So, it's been fun to jump into the medical literature to play real doctor for a while. But absolutely, and part of it was just curiosity, right, Andy? I was just curious as to how far we could push the analogy out. But the more that I learned, the more it actually started to guide my own research program. The whole idea of therapeutic inoculation is from a finding that I found in medical journals about therapeutic medical inoculations, where you're actually treating somebody who's already sick and then restoring them back to that desirable state, that state of health, and then protecting that state against future influence.

**Andy Luttrell:**

Before we get too far into the extensions of it, if we go back to just the basic premise, so, just to give folks a concrete idea of what actually this means, to inoculate an opinion or a belief against an attack, what does a study actually look like that does this?

**Josh Compton:**

Sure. So, we can go back to William McGuire's original research to look at how he originally formulated his inoculation messages, and then I can get us up to speed as to what more contemporary studies look like now. William McGuire was basing inoculation theory off some work of the 1940s and 1950s on how to design more persuasive messages. You know, almost everybody studying persuasion, that was the focus. How are we more persuasive? And then we finally reached this point where it's, "Oh my gosh. We've got all this great persuasion out there, this powerful persuasion. How can we protect ourselves from it? How could we resist these messages now that we've made them so persuasive?"

And he looked at this finding in particular from Lumsdaine and Janis in the late 1950s that was comparing one-sided versus two-sided messages. So, one-sided persuasive message just giving you all the reasons for thinking the way that you already think. Two-sided message being giving you some counterarguments to what you already think and then some refutations of those. And at least in that research from the late 1950s, the finding wasn't all that exciting. It's one of those classic answers to, "Do you use one-sided or two-sided messages?" And the answer is, "Yes." Right? Both of them seem to be, at least in this line of research, about equally effective in terms of persuading.

What was different, though, was whenever you came back and later attacked that position, only the beliefs that were supported by the two-sided messages could withstand that attack. The belief supported by the one-sided messages crumbled. It's called the paper tiger effect, right? So, it's this position that looks robust and looks strong, but when it's pushed, when it's pressured, it crumbles much like paper. And so, McGuire wondered why. What was it about these two-sided messages

that could create positions that were more robust and more resistant to future challenges? And that's how we got the inoculation theory.

So, the idea in these messages was to raise some arguments against what people already think and then to refute them beforehand much like we would give a little bit of a weakened virus in a medical vaccine to motivate the production of antibodies to prepare the body, to train the body to resist the stronger viruses, we can do the same thing when it comes to persuasive messages, too. So, you wouldn't just tell people there's all these good reasons for why you should brush your teeth every day, but we would tell them, "Here's some reasons why we might think that you shouldn't brush your teeth." Maybe you'll hear an argument that says that too much brushing, daily brushing causes you to lose enamel, and so maybe we should move from daily brushing to longer periods. But that's wrong. The science shows that... and then we refute it beforehand.

And by the way, that was one of the studies that... That was one of the issues that McGuire was studying in his early research, was an exciting topic like daily teeth brushing, right? But there was one other component to an inoculation message. It's not just this refutational preemption, these two-sided messages. It's also threat. And so, one of the ways that McGuire was introducing threat in his early research was through something called a forewarning, and that's when you tell people that they have the right position, they have the right attitude, the right belief, the right opinion, but there are people out there who are going to try to change their mind, and their arguments are so strong that there's a good chance that you are going to change your mind. For example, they might tell you... and then you start to give them the reputational preemption component.

So, in a medical vaccine, this threat component would be like what our body does naturally when we first encounter potential antigens. It recognizes it as something dangerous. It causes concern. And it motivates the body to start to prepare for that. That's what's happening with the inoculation messages, too.

So, if you fast forward 60 years, the messages look a lot the same, actually. We're still doing two-sided messages. We're still raising and refuting arguments beforehand. We're still using forewarnings to generate threat. But we're getting a much better explanation as to why the resistance is happening the way that it seems to be happening with inoculation and we're going way beyond issues like daily teeth brushing to inoculate against.

**Andy Luttrell:**

It's funny. As I was thinking about inoculation recently, I'm working on an episode of this show on debate, and so I've been listening to these, and a strategy that I often just noticed is people will end their section of the debate by saying like, "Okay, this other guy is probably gonna try and convince you that X, Y and Z, but you cannot go along with it because we know blah, blah, blah." And I never thought of that as an inoculation, but that sounds like what you're saying, right? To say like, "Hey, I just made my case. There are people out there who are gonna try and challenge this. They're wrong. They're wrong for these reasons and I'm equipping you to sort of take that into the battlefield when those arguments, if those arguments arise in your own experience." Right? That's the basic idea, right?

**Josh Compton:**

I think that's absolutely right, Andy. That's an example of an inoculation message that's a classic argumentation strategy. I mean, we say that William McGuire named inoculation theory and formulated it, and he absolutely did, but we can trace the elements of inoculation theory way back farther than the early 1960s. You can look at some of Aristotle's teaching, and the rhetoric, where he said one of the best ways to beat your opponent's argument is to rip them apart beforehand, right?

We can see traces of this preemptive strategy in the Art of War and in so many classic ancient, ancient writings. So, I think the strategy is not new, and it certainly is used without necessarily being recognized as inoculation, which is an argument that I use for all the more reason to study inoculation. It's not study inoculation so that we can use it and use it more often. It's study it because it's already being used, often for prosocial means. We're glad when that's the case. I certainly sleep better when that's the case. But it's not limited to that, so inoculation, like any theory, is an amoral tool, and we need to understand when it's being used because it's being used all the time.

And then one other example that your debate example reminded me of. It's a very common legal strategy, too, in the courtroom. I mean, when opposing counsel says, "Here's what you're gonna hear about them and here's why they're wrong," before counsel has a chance to represent your case. That could be a very high stakes example of inoculation being used. And cults use this, too. This is a very common cult strategy of your family and friends are going to tell you this, this, and this. Here's why they're wrong. And that's preempting their arguments. It's causing that resistance process that will make you less susceptible to it.

**Andy Luttrell:**

So, is the power of this... In some ways, you go like it's practical just because once I don't see you anymore, I can't defend my side again, right? So, like this is my last shot to keep you on my side, and so the timing just has to be before you leave. But there's another... Is it possible that there's a psychological explanation that goes like, "No, there's what you're doing is just powerful," right? The process that you're starting is a powerful process. It's not just like this is my last-ditch effort to keep you on my side, but it's like to do this ahead of time, even if I know you're gonna come back to me tomorrow, why would I still want to do this now rather than wait until tomorrow?

**Josh Compton:**

Right, right. I think that's spot on that a key part of inoculation is timing. So, it isn't that we have immediate resistance after encountering... Well, actually, let me back up. After encountering an inoculation message, some of the research shows that you do have resistance within seconds, that you're more resistant to attack messages. My guess... This is an empirical question. We need to figure this out. But my guess is that that's more of a heuristic response, that you're not necessarily remembering robust arguments for why you're right and why they're wrong. You're not necessarily in this active engagement, this critical thinking about the issue. I think that comes later.

And this goes back to that idea that when you get a medical inoculation, you're not immediately protected. That's on that fact sheet that we get when we got our flu vaccine and our COVID vaccine, right, is you're not protected yet. You need to wait some time. Two weeks is a very typical

timeframe. And something similar seems to be happening with inoculation messages, too. It starts the process of resistance. You start to think of not only what you just read or heard in that inoculation message, but you start to think about other counterarguments that people might try to get you to change your mind. Other refutations. Other reasons for holding onto that position. And that takes time. That takes time for you to think those things through, for you to do your own research, and according to a lot of our more recent research on post-inoculation talk, you also start to talk to others about the issue, and that continues the resistance process.

So, it's not one shot, whatever I say is the only thing that you're going to remember in the inoculation message. It's starting the process of thinking a lot more about the issue and hopefully a lot more critically about the issue. And I would say too, that's one of the explanations for why inoculation messages protect against attack messages that aren't even mentioned in the inoculation message. If inoculation messages only protected against the exact arguments that we were bringing up and then refuting, it would be a pretty limited strategy. But time and time again, research shows that by raising and refuting a handful of counterarguments, you're providing an umbrella of protection against theoretically any counterargument.

**Andy Luttrell:**

Hey, everyone. I'm jumping in here because I'm about to ask Josh this kind of rambley, jargony question, and I realized later that we didn't really set up an important distinction. So, in the inoculation theory world, there's a difference between passive versus active inoculation. Passive inoculation is the kind of stuff that Josh has been talking about and really is sort of the majority of the research in inoculation, which is to say it's providing people with arguments that someone else might make and then also providing the refutations for those arguments, right? So, it's almost sort of modeling for you how you would respond to a critic's arguments.

But active inoculation is a little bit different and in some ways McGuire in the early days thought that this was sort of like where the real juice was at, and active inoculation is what happens when you sort of tee someone up to come up with their own counterarguments, so you kind of present people with a message that attacks their view. Not in a super strong way, not in a super consequential way, but it nevertheless attacks their view, and you sit back, and you hope that they're able to sort of muscle through that experience, actively engage with that message, and then they come out the other side with a stronger set of defenses that they could then deploy later.

So, that's the distinction. Passive, which is very commonly studied and involves giving people examples of arguments that they might use to counter their critics' points, and active, where you're not giving them those arguments and you're sort of giving them an opportunity to build them on their own. It's an open question whether one is more effective than the other, but nevertheless, that is the distinction. So, armed with this information about passive versus active, the question I'm about to ask is gonna make some more sense, so let's get back to it.

... because I was gonna ask, obviously there's no physical antibody that this process creates, right? But like, so what is the correlate of that? My concern always with the passive version was that it seemed like that was exactly what was gonna happen, the thing you said doesn't happen, which is that you go like, "Okay, I learned the three things to say if anyone mentions X, Y and Z." But then like if you mention something else, I go, "Oh, well, I don't have anything to say to that. I guess

you're right. Forget it." Which is why I always sort of thought that the active version was more compelling to me, right? That it was like I'm training you, like we're in the ring, we're sparring, we're learning how to fight, not like, "Hey, throw this punch when someone does this." It's like you're learning to be... But what I'm getting is that that passive version, where I'm just sort of just modeling for you what you might do if someone tried to challenge this opinion, that has a more generalized effect than I had appreciated before.

**Josh Compton:**

It does. Right. And we're trying to do a better job of figuring out where all of these extra refutations and counterarguments come from, because again, it isn't just limited to what's in the actual message, so those ideas and those arguments have to be coming from someplace. One of the places we've got some pretty good evidence for is through talk, is through talking to your friends, and family, coworkers, along your social network about the issue. There's something about the inoculation message, and we think it's probably two things about the inoculation message. One is it's generating threat, so you have some concern, and research shows that whenever we're concerned about an attitude that we hold or a position that we hold, we go to our friends and family and talk about it, and so we think that's one of the motivators.

But the other is advocacy. The inoculation message strengthens our confidence to talk about this issue. We have some research to show that it actually has an immediate boost on your self-efficacy when it comes to how confident you are in defending your position, and so there's a lot of forces that are leading you out to talk to others. But we think it's probably more than that. We think it's probably also research. It's also reading. It's also coming up with other ideas and arguments. It's some internal logic, too, to whenever you start to make your own connections to why you hold this belief. A great example of this is a study that we did a few years ago looking at whether or not if you inoculate against temptations to engage in one risky behavior, would that also protect against other temptations for risky behaviors that you didn't even mention in the inoculation message? So, it isn't just that we're trying to protect you against new arguments. We're trying to protect you against new arguments against new issues.

And this research was led by Kimberly Parker and Bobi Ivanov from the University of Kentucky and me, and we inoculated attitudes about safer sex practices, and in particular condom usage with college students, and then two weeks later came back and challenges some of their positions not just about unsafe sex practices, but also binge drinking. And we found that inoculating against one risky behavior actually conferred resistance to the binge drinking justifications, too. Without even mentioning that topic in the inoculation message. And so, this umbrella of protection is huge. It's not only not limited to the specific counterarguments raised and refuted. It's not even limited to that issue.

And with the recent work that's being done with inoculating against reasoning fallacies, the umbrella is probably even larger, because in those messages you're not even talking about the issue. You're talking about reasoning fallacies people are going to use to try to change your mind on any issue, and then finding that that confers resistance to influence, irrespective of what the issue even is. So, the umbrella just keeps getting bigger, and bigger, and bigger from there.

**Andy Luttrell:**

Yeah. That reasoning fallacy stuff is super cool. Could you give an example of like what that inoculation message might look like? It just... yeah, that just feels like that cuts right to the heart of like, “Hey, it’s not about here are the three things to say.” It’s just like here is the way to think about how people are going to talk about this.

**Josh Compton:**

Right. Right. There’s a fairly large number of scholars who have now turned their attention to critical thinking inoculation, or logic-based inoculation. John Cook, Sander van der Linden, Jon Roozenbeek, Melisa Basol, several of us are jumping in, to try to figure out one, how do logic-based inoculations work, and then number two, do they work better than the more conventional fact-based inoculation message? So, in a critical thinking inoculation message, maybe we would bring up three different reasoning fallacies that you might encounter on any issue. Or not even reasoning fallacies.

Well, let’s just stay there first, like you could look at could you inoculate against ad hominem attacks. Could you inoculate against ad populum attacks, the bandwagon effect? All the reasoning fallacies that we teach in our introductory communication course, right? Can you bring those up preemptively, walk the audience through how you would respond to such... Well, number one, how you would identify the reasoning fallacy, and then how you would respond to it, and then could that inoculate you against those fallacies when you encounter them out in the wild, right?

Or a related idea here is can you inoculate against common misinformation strategies, so highly emotional narratives. Saying that a source is particularly credible without giving the evidence for the credibility of that source. So, that’s one of the directions that more contemporary inoculation seems to be going.

Yeah, so we’ll see if one of them works better than the other. We have 60 years of research to suggest that the more fact-based inoculation works, so I’m excited that we’re actually starting some new variations of these vaccines.

**Andy Luttrell:**

And as I’m in the process of scheduling my COVID booster, it raises a question here if... Let’s just push this metaphor as far as we possibly can.

**Josh Compton:**

I’m all for that. Yeah.

**Andy Luttrell:**

Is that something we have to do? It’s a common criticism in a lot of persuasion research that these messages might have relatively fleeting effects, or they might have effects that persist for some time but give it a month and people will rebound back to where they were initially. Do the resistance antibodies that are conferred through inoculation, do those persist? Do we have to sort of re-instantiate this motivation and ability to withstand attacks?



**Josh Compton:**

Right. So, there is certainly decay after inoculation when it comes to resistance, but the decay doesn't happen quite as quickly as a lot of people might think. I would point to one study from the early 1990s that Michael Pfau did with his colleagues on inoculating kids against temptations to smoke cigarettes. He was looking I think specifically at fifth and sixth graders, so right at that age where most kids of that age say they're never gonna smoke, and we know that that's just not the case. Many of the people who say that they're never going to smoke do. And so, he went in with inoculation messages to see how they would work, and they worked great, particularly if you were going back in about two, three weeks after the inoculation treatment.

But he went back later than that. He went back almost two years later and checked in with those groups and found some effects of the inoculation treatments almost two years later. So, it wasn't a huge, robust effect, but it was an effect. It was still there. And I think that that's one example of just how long-lived these effects can be.

But back to your question, yes, it makes perfect sense that booster sessions would work in persuasion inoculation, much like they do for medical inoculation. The research on that has not been as convincing as one might think. Booster sessions don't seem to hurt, but they also don't seem to be doing that much. The most conventional way that we've tried booster sessions is by just giving them another inoculation message and then seeing if that boosted it or not. A charitable way of looking at those weak results is that we're boosting too soon, that the reason why you don't see a statistically significant boost of resistance is because resistance was already high there with those inoculated.

Probably a better answer, though, is that we still haven't quite figured out the perfect timing for these booster sessions or the right booster. An argument that we've made in some recent work is that it's probably not so much that we need to give them another inoculation message, but maybe it's a mild attack, right? Maybe it's a stronger threat to boost that response because maybe the effect of the inoculation message boosting confidence boosted it too high, so when they got to the booster message, the people were already like, "Oh, yeah. I've already heard this. I'm ready. I wasn't ready two weeks ago but I'm ready now. I don't need this right now."

So, maybe we need to make those counterarguments stronger when it comes to that booster session, or maybe it's something completely different that we haven't even thought of yet. You know, I've made the mistake already so far in this chat talking about resistance being cognitive. All of these arguments and critical thinking, but there's a huge affect dimension to it, too. There's an emotional response. We're to the point now where we've found in the last 10, 15 years that inoculation messages make people angry, and anger is part of the resistance, too. Anger directed toward the source of the opposing arguments.

**Andy Luttrell:**

So, in this context it's the idea that I sort of get fired up that someone might want to change my mind and I get upset at it? So, there is work on different ways in which we resist persuasion, right? One is to actually go like, "Okay, I'm gonna pick apart what you have to say," and the other is to go like, "You don't know what you're talking about. You're trying to manipulate me. I'm not

listening.” And so, you’re saying inoculation could sort of provoke any of these myriad strategies through different kinds of mechanisms.

**Josh Compton:**

Right. So, I think part of it is just anger that your position is being threatened. Part of it is fear. Even though the threat component of inoculation isn’t really the same thing as fear. We’re not trying to scare people by saying people are going to change your mind. John Banas and others have made a really convincing case that the threat is more like motivation. It’s more, “Oh, okay. This threat’s coming. I better get ready for it.”

But even if the threat isn’t fear, there are fearful components to inoculation messages. The mere idea that you are going to be challenged on this issue for most of us is something scary, right? So, there’s probably fear, there’s probably anger, so it’s just like we’re finding out that there are tons of ways to prepare your body to resist viruses, we’re finding out there are tons of ways to prepare to resist persuasion, too.

**Andy Luttrell:**

The thing that some of these examples are bringing to my mind is the question of how much does this depend on the person wanting to resist, right? So, your example with kids and smoking is a very compelling one, but it sort of seems like it’s like the baseline has to be you already are committed, like you don’t want to be pressured into smoking, and so let’s give you a tool to sort of say no when peer pressure might feel too heavy, right? And so, you go, “I want not to smoke but I need the tools and the confidence to resist these peer pressure messages.” And so, that is required.

Or you go, “I’m so fired up, I feel threatened that anyone would try to change my mind. It’s incumbent upon me to rally my thinking and develop a stronger attitude that I can withstand this attack.” But I could also see someone being like, “Oh, well, I’d be happy to hear what other people have to say on this. I’m not threatened at all.”

**Josh Compton:**

Yes. Yeah, and by the way, that’s what we want, right? When we’re talking about protecting against persuasive messages, we want it to be based on this robust critical thought, careful thought, where you’re weighing the evidence and then truth wins the day. That’s what we want these inoculation messages to be doing. I don’t think that’s what they’re always doing but that’s what we want, and so part of our motivation here is how do you design a better inoculation message that has that as the effect versus boosting something like cynicism, or boosting closed mindedness, or boosting avoidance, right?

I mean, one of the easiest ways to avoid changing your mind is just not to ever hear the other side to the argument, just to avoid it, right? It doesn’t seem to be that that’s what inoculation messages are doing. If we go back to that post-inoculation talk research, we’re finding that it isn’t just causing people to go out and talk to likeminded individuals. It’s actually causing people to talk to people who have opposing views on the issue, too, which is encouraging in terms of what does this resistance look like.

But back to the premise of your original question there, yes, for nearly all of the inoculation

research for the past 60 years, a requisite has been the right position must be in place before you can be inoculated. You can't inoculate smokers against smoking. You can't inoculate someone against a tax on your support for a particular political candidate if they already don't plan to vote for that candidate. You have to have the right position in place. And that is a requisite for prophylactic, preventative, preemptive inoculation. The healthy state is there and then you're inoculated. The connection to the medical inoculation is super strong here, right? You can't get inoculated against the flu if you already have the flu.

And so, the reason for that is because for inoculation to work, it has to generate threat. And to generate threat, you have to care enough about the issue that you hold, about the position that you hold, to want to do the cognitive and affective work of resistance. If you don't care enough about the issue or if you don't have a position already in place, you will... Like you said, Andy, you would read the inoculation message and say, "Okay. Nobody's gonna challenge me on this. Great. I would love to hear more," or, "Sure, they can challenge me because I don't even care that much about this issue."

I once tried to inoculate against late night comedy, political humor in late night comedy, which was a... Well, I was going to say it was a really fun study. It was actually a really painful study because if you want to take away the fun of humor, then do research in it. But anyway, I think that was a real problem there, and why the inoculation treatments didn't work was because people were like, "Oh, I'm gonna hear jokes about this? Well, fine. I like jokes." And so, we didn't get threat boosted enough. In fact, one of the neatest findings from this failed study, which happened to be my dissertation-

**Andy Luttrell:**

Oh, really?

**Josh Compton:**

But that's 20 years ago.

**Andy Luttrell:**

Yeah. You did all right.

**Josh Compton:**

I'm at peace with it now. Was not only could you not inoculate against political humor, but it actually boomeranged. If you tried to inoculate against political humor and then they listened to the jokes, this was back in the old days. I was inoculating against David Letterman and Jay Leno, so late night comedy monologue jokes. Then you actually had a worse perception of the candidates who tried to inoculate you than if you would have just let the jokes happen.

In fact, if you just let the jokes happen, you felt better about the candidate after they were mocked than if you tried to inoculate. And I think that that comes down to threat.

**Andy Luttrell:**

So, these are folks who would have supported a political candidate, and you go, "These late-night talk show hosts are gonna make fun of this person. You should know that the person that you like

is gonna come under fire through this entertainment medium.” And theoretically, you might expect that to be inoculation in exactly the same way. You go like, “Oh, I now have to defend myself against these jokesters.” But instead, what’s happening is people go like, “I’m very curious what people are gonna say about this person.”

**Josh Compton:**

Yeah. They either said, “I’m very curious,” or they said, “Oh, good. Jokes. I like jokes.” So, they didn’t see it as threatening, as something worth resisting. And we even tried two ways with that. We tried one, we tried to inoculate against the basis of these jokes, so if they were gonna mock inexperience, then we would inoculate against an attack on inexperience. It would be... The attack would be in joke form, but we were even inoculating against the basis of that joke. And then we also tried what we called channel inoculation. Can you inoculate against the entire genre of late-night comedy? To say things like, “Look, you’re probably going to see this as just mere entertainment, as just jokes, but the research shows that jokes actually change our mind. We actually are influenced by this, so be warned. Be ready.” It didn’t work. No matter what we tried, we could not inoculate against late night humor.

And again, though, these were really simple monologue jokes. These were Jay Leno, David Letterman. We weren’t even in the era of John Stewart, Colbert, the more sophisticated humor.

**Andy Luttrell:**

It reminds me of Danna Young was on this podcast last year, and if I remember part of the premise of some of her work is that these political humor sources are a bit of a trojan horse, right?

**Josh Compton:**

Yes.

**Andy Luttrell:**

And this is sort of speaks to that, right? You go like, “I’m even trying to get you to resist,” and people still are like, “Yeah, but I’ll check it out.” And then embedded in that communication is information that might be potentially challenging or opinion relevant.

**Josh Compton:**

That’s right. I love her research program and if I were designing an inoculation message against late night comedy humor now, I would be citing her work as the proof of the importance of preparing yourself for potential influence. Right.

But all of that is prophylactic, preventative inoculation. Very recently we’ve started to look at therapeutic inoculation, where you don’t have to have the so-called right position in place. You don’t have to have an opinion on that issue. Can you have an inoculation that both heals and protects? So, gets you in the state that you want and then protects that state. And that’s exciting because some of the early results are indicating that yes, indeed, you can have therapeutic inoculations in persuasion just like you can have the prophylactic conventional inoculation.

**Andy Luttrell:**

It reminds me, I do a lot of work in attitude strength, and it always is this question of the dance between making attitude strong or weak, and changing them, and it sort of seems like there's this dynamic where you'd go the ideal persuasion strategy would be bring you to my side and then cement your opinion there, right? From a practical perspective. Which is kind of what you're saying, where it's like... I would think of that as a two-stage process. Is that what you're saying this therapeutic inoculation is? Or can the same message be accomplishing both of these things simultaneously?

**Josh Compton:**

It's actually... The way that we're conceptualizing it in some of the recent research is the latter. It's one message that both heals, in terms of leads you to the direction of the advocated position, and then protects. So, the implicit argument in the preventative work was basically saying that all of that work to get you to where you need to be with this position has already been done and now we're going to protect that. With the therapeutic inoculation, we're still using the exact same message, but finding that it's moving people in the advocated direction of the inoculation message and then making that position more resistant to change later. Which is a really neat finding and also a little scary, because that means that any inoculation message could be... I used to take comfort in the fact of inoculation works only when the position is already in place, so that kind of puts a boundary condition on the power of these messages.

Therapeutic inoculation doesn't seem to have that limitation. And so, I think it just goes to show the strength of this messaging strategy, this combination of refutational preemption and threat, to have both of those things together.

**Andy Luttrell:**

So, the style of these messages are still that sort of two-sided message approach, where you go, "People might say this. This is why it's wrong," right? Except in this case, you're saying, "You. Your people might say this. And here's why you're wrong." And so, the refutation is like to your position, but I'm also equipping you to be like, "And here's how you protect yourself from the arguments you would have made to someone else."

**Josh Compton:**

Yes. Yes. It takes a lot of mental gymnastics, doesn't it, to try and figure out who's against who, right? And it almost inspires this really interesting type of intrapersonal persuasion to where you're kind of motivating the sense of self-persuasion.

And I should emphasize this therapeutic inoculation work is relatively new. We don't have a lot of data on it yet and there's still a lot to try to tease out as to how this is actually working. But you know, we have at least one or two studies using both the conventional counterargument refutation strategies that seems to be moving people in the advocated direction, and these inoculation messages that rely more on critical thinking and logic. A study that just came out from Bobi Ivanov and his team found that therapeutic inoculation messages don't seem to work like prophylactic messages, through threat, and through counterarguing, and so we need to figure out how they are working. What is the mechanism there?

And that makes sense, by the way, that it wouldn't work through threat. If I tell you somebody's going to change your mind and they're gonna try to convince you of this position that you already have, that's a very unthreatening message. And so, now we get to try to figure out what is going on in these situations.

**Andy Luttrell:**

Well, good luck with all that. The last thing I wanted to pick your brain on was the applied value of this stuff and also how it works with misinformation, right? That's sort of a new wave of this work, and I think we can probably have both of those conversations at once, which is this is all very theoretical, this is all in the interest of building a theory of communication and resistance, but if I'm... let's just start with applied on its own, right? If I'm a politician and I want you to support me, I have my base, and you all love me, but I want to make sure that the other side doesn't get to you. Are there ways that you've seen people implement inoculation in the field, or ways that have been tested in the field? What advice might you give me, the politician, to protect my base from being swayed by my opponent?

**Josh Compton:**

Right, so politics is one of the most common applied strategies with inoculation theory. Bobi Ivanov and I wrote a chapter a few years ago called Vaccinating Voters that was all about all of the research with inoculation and political campaigning. And again, this strategy was in use in politics way before McGuire called this inoculation theory in the early 1960s. This idea of warning your voters, or your supporters, as to what the opponent is gonna say about you.

So, research both in the field and in laboratory settings has found that if you warn against attacks on your character, on your policy positions, either of those broad categories beforehand, if you bring up some of those counterarguments and then refute them, and then warn your supporters that your opponents are going to launch those charges at you, they will be much more likely to resist them when those attacks come. Whether those attacks come in political debates, or in editorials, or in advertising, or in word of mouth, regardless of the channel, being prewarned against a handful of attacks, regardless of what those attacks are even on, provides resistance to those same attacks that are launched later, or completely different attacks.

So, the realm of politics we almost always think about inoculation as this campaign strategy, but we're also looking at can you use inoculation messages to lead to more prosocial behaviors in a political context. Some of Michael Pfau's early research found that inoculation messages as compared to other types of political messages are actually more likely to encourage democratic deliberation, intent to vote, to have political discussions with others, to do research on the campaigns. It's a much more interesting political message, so it isn't just helping individual candidates. It's actually helping some prosocial behaviors, too, by modeling what a robust dialog about politics looks like, about bringing these multiple perspectives into the messages.

Another study looked to see if you could, speaking of a political context, if you could inoculate against the spiral of silence. You know, this idea that if you think you have a viewpoint that other people don't share, you're less likely to talk about that issue. And so, minority viewpoints can dwindle away because people stop talking about them. Well, inoculation messages were much more likely to motivate continuing talk about issues that people felt weren't supported by the

majority. And that sounds like a step toward a healthier democratic civic discourse. And so, yeah, it can help campaigns, but it can also help the larger political process, too.

**Andy Luttrell:**

So, speaking of threats to a healthy civic discourse, a new wave that you've been involved in amongst many others is ushering this into our understanding of misinformation and this concern that has bubbled up over the last several years through online media about misinformation and people's susceptibility to it. So, could you talk a little bit, just like what that program of research has been doing, and how inoculation is relevant to this particular issue?

**Josh Compton:**

Right. And this kind of gets into what we have talked about earlier about logic-based inoculation treatments, where we're testing to see whether or not to protect against misinformation, can you identify the actual strategies that are going to be used beforehand and prepare people to number one, recognize those strategies, and then number two, be able to think your way through them to come up with a better conclusion. We think, and some of the early research shows, that it is creating a much greater umbrella of protection against anything somebody might say using misinformation about the issue.

So, researchers at Cambridge have led a number of studies using online games to do this. So, can you create a scenario where you are either responding to misinformation being lobbied at you in this narrative, game-like format, or you are the person using the misinformation to learn about the strategies, to actively work your way through what it looks like to weed out bad information. And the results are looking pretty encouraging when it comes to issues like fake news, climate change, so the result is that you're not just prepared for specific myths that you're going to hear, but you're prepared for why those myths are wrong, and not just based on empirical evidence, but based on logic. Based on the reasoning fallacies that you are encountering through this.

And you know, that's always been an implicit argument in even the two-sided message format, is that they're gonna tell you this, and here's why they're wrong, but now we're just kind of flipping the underlying logic that was already there and making that the prominent feature of the messages.

**Andy Luttrell:**

Are you doing work on encountering or combating misinformation about the COVID vaccine?

**Josh Compton:**

Yeah. Yeah. In fact, we're about to launch a study with my colleagues at Cambridge about to create an online game about vaccination misinformation, which... I mean, that's a perfectly apt application of inoculation theory, right? I mean, to apply it to actual inoculation messaging.

**Andy Luttrell:**

Yeah. That's what I love about this, that we've come full circle, where it's like now the inoculation is about inoculation.

**Josh Compton:**

Absolutely. One of my favorite findings when I was poring through some archives trying to chase something else down was this pamphlet written in the 18<sup>th</sup> century by a Boston minister about smallpox vaccines, and this pamphlet was something that he prepared to give to his congregants, because even though the vaccine was available, a lot of people were resisting it and avoiding it based on what he called religious scruples. So, he wrote this pamphlet that basically starts by saying, “Everybody wants to be healthy. Everybody wants to be protected against smallpox. But there are people out there who will tell you that the vaccine is not the right approach to protecting yourself. For example, they might tell you this. Here’s why they’re wrong. They might tell you this. Here’s why they’re wrong.” He wrote an inoculation message. I mean, it is textbook inoculation and the more I’ve been digging around in some historical artifacts, the more I’m finding inoculation theory used in a medical inoculation context way before we even imagined COVID-19 misinformation being the threat that it is.

**Andy Luttrell:**

History repeats itself.

**Josh Compton:**

Right.

**Andy Luttrell:**

Well, thank you so much for taking the time to talk with us. I don’t think I’ve met anyone quite as enthusiastic about a particular theory as I have been... I think the first time I saw you use on Twitter the hashtag #innoculationtheory is when I knew. This is a guy with a passion for comm theory.

**Josh Compton:**

Yeah. I do. Part of it’s what I said earlier, too, is that when I first got to grad school, I felt so intimidated. I was a first gen college student, certainly first gen grad student, wasn’t sure what all of this academic approach to communication was all about, and then finally, here’s a theory where if you say its name, you’ve explained it. It has immediate heuristic value and like I get this. And when I started to dig in and realize, “Oh, there’s so much more to it, though. There’s so much more potential room to grow here.” That just set me in a 20 plus year journey and the more I learn about it, the more excited I get as to what we know about how it works and where we might be going with it next.

**Andy Luttrell:**

Nice. Well, I will be on the edge of my seat to see where this all heads and thank you again for taking the time.

**Josh Compton:**

Thank you, Andy. My pleasure.

**Andy Luttrell:**

All right, that’ll do it for another episode of Opinion Science. Thank you to Dr. Compton for taking the time to talk about inoculation theory. For more about his work, you can check out the show



notes for links to the research that we talked about and a link to his personal website. Oh, also, one thing I really love about this new wave of inoculation research is the term prebunking, so like we're usually on a mission to debunk misinformation, but inoculation theory suggests that we should actually be trying to prebunk it. You're welcome for that new word.

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