**After the Fact |** A Conversation with Hank Green

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## TRANSCRIPT

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**Dan LeDuc, host, "After the Fact" podcast:** Welcome to "After the Fact." For The Pew Charitable Trusts, I'm Dan LeDuc. And today we're joined by special guest Hank Green. He's a science communicator, author, and co-creator of YouTube programs like "CrashCourse" and "SciShow."

*[YouTube clip plays]*

**Hank Green, YouTuber, author, and science communicator:** When it comes to science on the internet, it's risky out there. So today, we have decided to delve into some of the doozies and debunk them. We're going to start with one you most definitely have been told before—I know I have—that you lose most of your body heat from your head. Turns out that math is a bit off.

**Dan LeDuc:** Hank opened up about his 2023 Hodgkin's lymphoma diagnosis and shared how he used the experience to educate and connect with his audience during treatment. We also talked about the role of science communication today, and how it can help build trust and push back against misinformation.

At a time when only 45% of U.S. adults describe research scientists as good communicators, voices like Hank's are more crucial now than ever.

Hank Green, thank you so much for being here.

**Hank Green:** Thank you for having me. You guys pay a lot of attention to how things are. That's your job. Are they okay? Because they don't, they don't seem great.

**Dan LeDuc:** Are things ever great, or are we aspiring to greatness?

**Hank Green:** Yeah, we're just trying to be on the arrow pointing the right direction.

**Dan LeDuc:** There we go. Yeah, some of what we do in this building and elsewhere is to try to make the world a better place. But that's what you do with videos and podcasts and books. You're not doing it to make the world a worse place.

**Hank Green:** No, definitely not. Sometimes I feel like I get on a wagon and I'm like, we're going to ride this wagon to the good place. And then the wagon ends up someplace I did not expect it to go. But yes, I don't think I'd be doing it if I thought that I wasn't helping out at least a little bit.

**Dan LeDuc:** For, like, the people who have not seen you on YouTube, or heard your podcast, or read your books, tell people what it is you do.

**Hank Green:** What do I do? It's the dinner party catastrophe that I face every time I meet a new person.

I'm an internet guy. I've been since 2000, really since the '90s, I've been actively making stuff on the internet. But then since 2007, my brother and I started making YouTube videos together.

**Dan LeDuc:** Let's tell people that your brother is John Green.

**Hank Green:** Yes. Yes, you may have heard of John Green. He is the novelist. And he's written "The Fault in Our Stars." It's his most famous book. But we've done a lot of other stuff too. And so we started out making YouTube videos and then, just as that happened, noticed other things that we could do with the tools that we suddenly had access to the point where we have an educational media company that makes a show called "CrashCourse" that's in a lot of American schools.

There's a show called "SciShow," which is like a popular science. And "Science News" program on YouTube. We have a collaboration with PBS called Eons, which is about prehistoric life. And then we also have a company called Good Store, where all of the profits donated to charity.

We just keep doing stuff, because we see opportunities to do stuff. And that is a little bit exhausting, but it also makes the conversation at the dinner party very weird. I also am a novelist. I have done stand-up comedy professionally. I was once a musician. I was once a journalist. I was once a biochemist. I've had a lot of lives for a 45-year-old, but it's been fun.

**Dan LeDuc:** Central to all of this is mostly, I'll say, science, right?

**Hank Green:** There's a lot of science, yeah.

**Dan LeDuc:** Yeah, there's a lot of science. That's what I was hoping we could spend some time with. Because on this podcast, we frequently interview the doers of science, right?

The researchers and the men and women in the lab but the doers aren't always really good at explaining what they do, and explaining what they do really matters, right?

**Hank Green:** There's a big piece of what I do, and probably what I'm most well known for, is doing science communication, and that is a job that I think it's been being done for a long time, but we didn't really put our finger on it until the era of maybe Carl Sagan. I just actually went back and read "Demon-Haunted World" recently and a little bit upsetting to be like "I fear a future where," and I'm like, "oh, it's the one I'm in."

But yeah, so the role of a science communicator, like, it can obviously be a person who is a working scientist. But, and often is, can also just be a person, like I have a background in science. I have a master's degree in environmental studies, and I have an undergrad in biochemistry.

But I have lots of colleagues in this space who might have an undergrad degree, but it's in like communication. I love that it is open to all of those different perspectives, but the thing that you do as a science communicator is you have to be the bridge. And I think that you need bridges.

**Dan LeDuc:** Now more than ever.

**Hank Green:** Yeah. The world is very complicated, and we need people who understand it deeply and specifically. And we also need people who can take that deep specificity and try and help people get an accurate view of everything, if they want it. A quote that I just saw this morning. I was reminded of the biggest problem in communication is the illusion that it has taken place.

**Dan LeDuc:** Oh, I like that.

**Hank Green:** I feel very strongly that my job isn't to say true things. It's to help people believe the true things. And so if I'm saying something that's true, but it's putting a wrong idea in their heads, then that's still a failure.

One of the great things about the internet is I can go onto Twitter or Bluesky or TikTok or YouTube and I can say something real fast and then I can get back misunderstandings of it. We have now all of these opportunities to just say something and then somebody's like, no, you're wrong because of X.

And I'm like, I'm not. But you've helped me understand that might be one way someone would misinterpret the way that I'm trying to communicate this. And that's going to change how I communicate it in the future. So we have all these wonderful tools now that we didn't used to have. And it, they are really tools for empathy if they can be used correctly.

**Dan LeDuc:** I love the word empathy that you used.

**Hank Green:** I think that creation is always about empathy. The process of doing science communication well is really about understanding the topic, but also putting yourself in the shoes of somebody who maybe knows less than you, and trying to figure out what it is that's exciting about it. Whenever I talk to a scientist, they'll tell me what the most interesting thing is. And I'll be like, you're pretty wrong. The most interesting thing was like four steps back, because I didn't know that.

**Dan LeDuc:** You are going much deeper with your audience on a much more personal basis.

**Hank Green:** I'm out here on the internet, and I'm, like, if you follow me closely, you know about my cancer journey, about my wife and I've got a kid and that I've been going to the gym since I finished chemo.

And that's really changed things about me. And you know that I'm like super into pelicans. And that's like when you end up having this, like, really in your brain, a very friend-like relationship with a person who you've never seen in three dimensions.

**Dan LeDuc:** You had to make the decision early on to be comfortable sharing this much about yourself with this community.

**Hank Green:** Kinda.

I didn't know. I didn't really know I was making it at first.

**Dan LeDuc:** Yeah? Was that kind of weird for you at first?

**Hank Green:** What happened is because the growth was so linear that early on, sharing a lot didn't have any consequences, so it was, like, fine to just show the outside of my house, or to talk about stuff I would not talk about nowadays, and as it has grown, I have had to rein that back in. You have to decide which parts of your life you are comfortable sharing, which parts of yourself you're comfortable sharing, and that changes as you have different experiences, but also as there are more people who know who I am.

It was a little bit of a frog boil. It wasn't like one big shock. But also because the growth has continued to happen. I have had to be more, much more conscious about what I share than I used to be.

**Dan LeDuc:** You've already alluded to it in this conversation. You've shared some really personal stuff over the last year. And anybody who follows you knows about your illness. Tell us about what happened and why you decided to share your story in the way that you did.

**Hank Green:** When I first was like, I have to tell people about this. There's no way to just not tell people about this. I was really worried that all this work I had done to be like, this is the kind of guy I am.

And this is why you can trust me. That was going to get eclipsed by, "Oh, he's the guy who got cancer." And because of course it was the biggest thing in my life, one of the biggest things that ever happened to me. And it took up a lot of space in my brain, and I figured it was going to take up a lot of space in, in the world, and it did,

but then very quickly after I actually started going through the process. I was like, whatever. I, if I am the cancer guy, then let's be the cancer guy. I suddenly I went from being the science guy talking about science to being the science guy experiencing science.

This is a topic that affects everybody. If you don't get cancer, somebody you love will. For a long time, we couldn't talk about it because the outcomes were so bad. And the outcomes are still bad. But the outcomes are better than they used to be.

There are going to be people who live with cancer for a long time now. It is not uncommon to get a cancer and die of it 20 years later. And that's a long life, that's a lot of life.

It's a moment where actually we need to know more because it used to be very little to know. What we used to need to know was that's very sad and that person's going to die. And now that's not the story anymore. And so we need to talk about it more.

And I just feel like I got thrown into it at that moment when we haven't made that transition yet, but it's time to make that transition.

And the more I shared about it, the more people really responded to it. And I'm like, oh my gosh. This is, in a weird way, the best possible outcome to a cancer diagnosis is like, oh, I get to be who I've always been. I get to do my job, but I get to do it about its entire new topic that I was totally ignorant on.

**Dan LeDuc:** Please tell everyone who's listening your prognosis.

**Hank Green:** Oh yeah, that's important. My prognosis is that is that I have a less than 10% chance of relapse, which is great. And then I have a more than 5% chance of relapse, which is less great.

And if I hit five years, after finishing treatment without any relapse, then they call that cured. Hodgkin's lymphoma is particularly susceptible to the tools that we have to throw at it. So, that's good news.

**Dan LeDuc:** Your illness obviously informed a lot of your professional life over the last year or so. Just take a step back from when you got started, and how do you decide what it is you want to tell us about?

**Hank Green:** I respond a lot to questions, and that's really great. I get tagged in a lot of weird stuff on, whether it's TikTok or Instagram.

Somewhere else. People just are like, what the heck is going on with this cloud? Or what bug is this? Or if, if you're driving 70 miles an hour and you throw a baseball 70 miles an hour, why doesn't the baseball go 140 miles an hour?

I have to say, almost like so many of the questions I get can be answered with: air exists. I can answer that question about throwing a baseball out of a fast car in like 12 different ways, and you'd learn different things from the 12 different ways.

And so it, it is really about what I think is exciting and interesting and necessary. So there's like a piece of that for me that's just, what am I actually into? And then there's a piece of it that's, what do I think other people are going to be into?

But there is a very strong bias, more than any other bias, toward interesting. Whatever interesting is. That's why the news doesn't talk about good stuff, because good stuff isn't that interesting. The bridge didn't collapse isn't interesting.

So there's always stuff that's, for a broad audience, it's just not going to be interesting, and I do worry that leaves gaps in people's knowledge of the universe, but…

**Dan LeDuc:** Because sometimes the dull, but it's the dull but important.

**Hank Green:** Yeah. There's a lot of dull but important. And then like that stuff doesn't become important until suddenly it is.

**Dan LeDuc:** So when you want to tell somebody about something, the baseballs, do you have this goal in mind, I want to tell you something so that by the end of my time with you, you're going to know X.

**Hank Green:** The goal isn't really X. The goal is just more, it's I want people to keep watching the video. If they're not watching, I'm not reaching them. So I really optimize for keeping the content engaging. And that's different on different platforms. I do try to model something which is, OK, so you don't know this, but what do you know?

I think Google in our pockets has convinced us that every question we have has an answer. And if somebody is telling you that the gap of I don't know should be filled by aliens or, some, something …

Every bit of knowledge that you have started out as, "I don't know," like all the things that we know started out as, "I don't know." And if we had just put aliens there, we would have never found the actual answer.

**Dan LeDuc:** I have watched you in your podcasts literally do Google searches where you bring your screen up on the screen next to you. And are you doing that to do research? Are you doing that to show people that there's wrong stuff out there? And what's the process that, at the end of this, you had said earlier, this is why you can trust me. What do you do so that people can say, yeah, that's why I trust him?

**Hank Green:** When I go through a public process of trying to figure stuff out, that is a couple of things. It is 100% a trick to keep you watching. We're going on a journey together, and I'm just making jokes the whole time. And I get to

edit it afterward so that the jokes are actually good. Two, I am trying to model a behavior where I'm saying, this is a source that I trust for these reasons. And that's saying two things.

First, you should have reasons to trust something. But it's also saying, you might not actually know which sources to trust because you're not me and you don't have my job. Which leads into number three, which is this stuff is hard, and you should not expect to know everything.

You shouldn't have to try and do this for every fact that you come across on the internet. What you should do instead is to not believe stuff that comes out of nowhere.

You should believe stuff that comes from sources that are reputable. And those are sources that earn your trust by an allegiance to the truth, rather than an allegiance to an appealing perspective, which we all love an allegiance to an appealing perspective.

**Dan LeDuc:** I love finding the stuff out there that I agree with. Yeah, it clearly must be right then.

**Hank Green:** It's very hard to decide to fact check a stat that you agree with. If it's like, ah, yes, that confirms my worldview. That never raises the red flag for people. But it can be really interesting to go into how you ended up sharing something false. And I did a video a while back that was like four lies I believed.

**Dan LeDuc:** I just watched that before we sat down to talk.

**Hank Green:** Yeah. I think that if a high school student can make a video like that, that, they should get into any college in the country. That is the most important skill is not to be able to identify a lie. It's to be able to identify when you believed a lie, and then to walk through the process of how you ended up believing it.

I will toss a huge amount of respect to anybody who does something like that. Because, if you think it doesn't happen to you, then you're believing a bunch of

lies. And if you know it happens to you but you're ashamed so you don't bring it up, then that's also making it taboo to be wrong about stuff.

**Dan LeDuc:** What I was struck by in that video is its lies, I think, gives it this negative, overt connotation that someone was deliberately out to mislead you. And what you were looking at was stuff that was put out there because it was interesting. It went viral right away. And of course, what did we say before? Interesting is what sells and what you want to be. And it started with a fact but got misinterpreted. And so it's not necessarily that people always lie to, right? It's more about mistakes happen that seem subtle at the time that becomes something more than that.

**Hank Green:** Yeah. I don't know that there were any examples in that video that were deliberate disinformation. And but the thing I believed was wrong in all of those cases.

I think the majority of the things that we believe are wrong are it was interesting and so that's how it got shared around.

**Dan LeDuc:** We've talked a little bit about why should people trust what you do. And you do have this vetting process, right? When you put out stuff about medicine and science, you have doctors look at it and test it.

So, this stuff it's, is it correct to say you have you've been fact checked before you start sharing stuff with your audience?

**Hank Green:** Not always.

**Dan LeDuc:** Okay. Help us know how to parse this then.

**Hank Green:** On "SciShow" and "CrashCourse," 100% of the time that's been through a fact check.

With stuff that I am just putting up on Hank's channel where I'm just like showing people the process of me going through the work that hasn't been fact checked. And one of the things there is being conscious and aware of how

it gets interpreted after it gets uploaded and also listening to feedback that I get from people.

When I'm making TikToks, I just have to stay in safe places. I'm not trying to say stuff that's like way outside of my known expertise, but occasionally I'll say something like recently, I, this fact was in my head that starlings were introduced to the U.S., they were released in Central Park by a group of people who wanted the United States to have all the birds that appeared in Shakespeare plays.

It turns out that might be true, and that's a fact that you could find that on lots of reputable websites. Sources. But what's the source? No one really knows what the source is. And I've, I now that I've looked, I'm like, I don't know, I'm actually not comfortable saying that anymore.

Yeah. Yeah.

# Trust in science

**Dan LeDuc:** You are trying to make sure people have trust in you. You're very conscious of that, and that's greatly respected. So let, but let me ask you to step back and be an observer of this world that you're putting your stuff into. Trust in science and scientists right now is higher than trust in a lot of other of our institutions, governments, the courts, or whatever.

But it's still a good no more than three-fourths of the people who are saying yes, scientists are well intentioned, scientists want to do things. That means there's a pretty big contingent out there who are like, eh, what's up with those people? Yeah. What do you make of that?

**Hank Green:** So, like, let me ask you, because I hopefully you know, has that number been getting different over the years?

**Dan LeDuc:** It's grown a little bit. Our colleagues over at Pew Research look at that and it slipped during COVID, right? Since COVID's over, it's up a bit. But I think the latest numbers are no more than three in four people are saying,

yeah, good. That means there's a fourth of the people out there who are like, I'm skeptical about all this.

**Hank Green:** I just, I guess my reaction to that is that it doesn't surprise me. People are all very different from each other and have a huge variety of worldviews.

Since science started, there's been fights between the, the sort of traditional interpretations of our world that has a God that has created us and that decides what happens to us after we die.

And to the extent that science fills in those gaps in ways that are uncomfortable can, I think, alienate people from science. This is what we find is that people tend to trust science when it comes to stuff that doesn't impact their worldview or their livelihoods. And once it butts up against those things, then people lose some faith.

I think about this in terms of chemotherapy as well, which is, there's some folks who elect to not get treatment for cancer or to get treatments that are either not known to work or known not to work.

And those people then die, which is a bummer, and you, you want to think about what's happening in those, in, in those situations? The biggest collision is with sort of faith in systems and trust in each other, trust in something that's broader than just the people that you can reach out and physically touch.

And all of it, everything, is based on that trust. We trust that somebody makes the car not explode. We trust that people running clinical trials know what they're doing.

But it's so complicated. People on the internet, people using the systems of the internet can be good at degrading trust so that they can fill in that vacancy and be like, I am now the person who you should go to for this instead of these sort of like trusted people. Systems that have all of this, like, error checking going on, but no, I am a charismatic person who you should watch my Instagram reels about this. And then pay 250 for my course.

I am honestly not super surprised by it, but what I want to be is a way to take those complex systems and help people understand the human face of them and the reasons why they have to be so complex.

And maybe they don't have to be as complex as they are, because I think that, that creates distrust, like, why are these systems so bizarre and impossible to understand, but I can help people understand that there are reasons why this stuff is importantly complicated and sometimes unpleasantly slow.

**Dan LeDuc:** If people want to learn about science, what's your advice on how do they fulfill their curiosity?

**Hank Green:** I would suggest books, or even audiobooks also. I, there's, every year, there's like a hundred very good pop science books that come out. There's one that I read this year called "Becoming Earth" that is about how Earth, is how like the biology and geology of the Earth are really much more intertwined than you think they are.

And you could even go deep, just go, go read "Cosmos," go read Carl Sagan's "Cosmos" and most of that, and you can read, and he'll be like, it may be that we will one day detect the waves of gravity, these gravitational waves, and then you can be like, oh, no, we did it.

We're there. We're in that world. Not only can we detect them, we can, like, use it to see the gravity, gravitational waves of the big bang.

There is lots of great stuff, but also, there are so many great science communicators in print on paper. YouTube, on TikTok, there's, they're all, they're out there and they're amazing. And I love that we exist in a world now where like there is not one Bill Nye.

There's like all of these people, and they get to represent a bunch of different ways of looking at this for a bunch of different audiences. And so I love to be a part of this with so many other people, and a lot of us are buds, which is really fun.

**Dan LeDuc:** Thanks for listening. To hear more stories like this, visit us at pewtrusts.org/afterthefact. And if you have questions or feedback that you'd like to share, you can write us at podcasts@pewtrusts.org. For The Pew Charitable Trusts, I'm Dan LeDuc.