

Frankenstein and His Creation: Who's the Real Monster?

Christiane Wisehart: Examining Ethics is hosted by The Janet Prindle Institute for Ethics at DePauw University.

Andy Cullison: This episode of Examining Ethics was created in partnership with Indiana Humanities, whose One State, One Story Frankenstein program invites Hoosiers to consider how Mary Shelley's classic novel can help us think about the hard questions at the heart of scientific investigation. One State, One Story Frankenstein is made possible by a generous grant from the National Endowment for the Humanities.

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I'm Andy, the director of the Prindle Institute and your resident ethics expert.

Christiane: I'm Christiane Wisehart. I'm a producer on the show and I work with Andy at the Prindle Institute.

Eleanor Price: I'm Eleanor. I also produce the show and I'm a graduate fellow at Prindle.

Andy: And this is Examining Ethics brought to you by The Janet Prindle Institute for Ethics at DePauw University.

Christiane: Today, we're talking about Mary Shelley's 200 year old novel *Frankenstein*, published in 1818. It introduced the world to archetypes. We're still familiar with the mad scientist and his terrifying creation.

Andy: But the novel is more than just a horror classic. It also asks questions about the ethics of scientific and technological innovation, questions that we still struggle with today. Stay with us to learn more about ethics and *Frankenstein*.

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Eleanor: On this episode, we're going to be exploring a question inspired by *Frankenstein*. Is it wrong for scientists and innovators to work or create in isolation? First, we'll introduce you to sociability, an important behavior shaping idea in the scientific community of the 19th century. Then we'll discuss whether scientists and innovators working today have similar ethical obligations.

Andy: We'll talk about the importance of transparency in the ethics of scientific and technological innovation. We'll also explore the importance of democratic oversight to the world of science and technology. But before we get to all that, Eleanor and Christiane are going to

provide some historical context for Mary Shelley's chilling horror tale. I'll return in a bit for our discussion.

Eleanor: Even if you've never read *Frankenstein*, you're probably still familiar with the main characters, but like a lot of archetypes, the Frankenstein's monster from movies and TV is a little different than the original creature in Shelly's novel. So we're gonna do a little rundown of the parts of the book you need to know to follow our discussion.

Christiane: In *Frankenstein*, Mary Shelly tells the tale of Victor Frankenstein, an obsessive student of science who wants to bring dead flesh back to life. After months of feverish, isolated experimentation, he fashions a humanlike creature out of different parts of dead corpses and animals. But as soon as he brings this creature to life, Victor Frankenstein is horrified and rushes away to his bedroom. This is the first of many times that he just totally abandons his creation.

Eleanor: The creature is doomed to live a life of solitude because his creator repeatedly abandons him. To make matters worse, the creature is repulsive looking, and he's also shunned by the rest of society. The creature's isolation drives him to vengeful fits of rage during which he murders lots of people, including Victor's brother Victor's best friend and Victor's new wife.

Christiane: If you've read the book, you know that there's a lot of plot points that we're leaving out. And unfortunately, we're also gonna have to leave out a lot of the philosophical territory that Mary Shelly covers. In the span of just about 200 pages, she investigates issues like feminism, the nature of human consciousness, morality, and the limits of self education.

Eleanor: But, it's also packed with questions about the ethics of scientific and technological innovation. One of those questions is, is it wrong for scientists to work in isolation? To help us examine that question, we'll talk with an English literature scholar, Monique Morgan, and a historian, Jason Kelly. They help us understand the scientific world Mary Shelley was writing about

Christiane: At the time of its publication in 1818, *Frankenstein* was full of the latest scientific advances. Mary Shelley was especially captivated and inspired by an idea called galvanism. It was developed by a scientist named Luigi Galvani and his nephew, according to Monique Morgan, Galvani and his nephew performed some horrifying demonstrations that seemed to have been the inspiration for Victor Frankenstein and his experiments.

Monique Morgan: The idea of producing motion in dead bodies was something that had actually been demonstrated. Luigi Galvani and his nephew, Giovanni Aldini, tried to spread the notion that electricity coursed through animal bodies and to show that electricity was important for muscle movement, they would take dead bodies of animals and hook them up to basically what were early versions of batteries. Galvani's nephew basically went on a tour around Europe, demonstrating his uncle's ideas and performing these experiments for public audiences. And

often he would use animal parts, frog's legs and ox head, **{creepy music fades in}** but occasionally he would use human corpses. So the most infamous experiment was in 1803. He took the just hanged body of a murder, Thomas Forster and hooked up his body to these batteries to produce muscle contractions. **{music fades out}**

Christiane: The galvanism provided only part of the inspiration for the monster's creation. Mary Shelley actually had loads of unethical and thoroughly creepy examples like this to draw on for her plot. Corrupt physicians using stolen corpses for experimentation was another inspiration.

Eleanor: Nowadays, lots of people donate their bodies to science for dissection, but in the 19th century, this practice was not yet widespread. Historian Jason Kelly explained that the only other legal way scientists and physicians could find bodies to dissect was to use the corpses of the recently executed.

Jason Kelly: Physicians in London, for example, would collect these bodies and take them back to their anatomy theaters and dissect them publicly for those who wanted to learn more about anatomy. So it was a grizzly practice where you would have potentially physicians or the people who work for the physicians who would come to the gallows and take the body to go back to the physicians. So that was one way to get a body is through official channels, but there were not enough bodies to serve the size of the physician community. **{sound effect of footsteps with creepy music}** So another way to get bodies was to hire somebody to illegally take bodies for you. So you might have a group of body snatchers who come with their own muscle into the cemetery at night and dig up a body. So they might bribe the watchman, go into the cemetery, dig up the body after it's been buried earlier in the day and take the body back to the physician. **{music and sound effects fade out}**

Christiane: When Victor Frankenstein visited graveyards to get dead bodies, he would've been very identifiable to Shelly's audience as a grave robber or a body snatcher. It's an example of Mary Shelly, very deliberately playing on her audience's fears about dissection and grave robbery.

Jason Kelly: Mary Shelly is, is very taken and knowledgeable about science. So I don't think she necessarily has a problem with the practice of dissection, but she knows her audience really well.

{creepy music}

And she knows how frightening it is to imagine your body being taken from the ground after it's been buried and to be put in public in a theater to be dissected in front of people. She knows how grizzly and horrible that must sound to her contemporary audience. So I think she's doing that just that little, extra bit of horror in there. She knows what people are thinking. **{music fades out}** They know what they're, she knows what they're reading in the newspapers. And she knows to some extent people's concerns over this. And so she's really playing on that and

she's doing a great job at it.

Eleanor: Victor's grave robbing was taken straight from reality, but as Jason Kelly explained, there's one important way in which Victor differs from many scientists practicing in the 19th century.

Jason Kelly: One thing that's so important in the community of scientists during this period is what they called sociability. The importance of community and building community and sustaining networks of communication and meeting with people and being friendly and being the type of person who people wanted to be with. Victor Frankenstein falls into this singular pursuit of knowledge, where sociability just disappears from his life and is unnecessary and in many ways and I think Mary Shelley presents this pretty well. He becomes marginalized from the society in which he lives.

Christiane: Victor Frankenstein rejected any kind of community. And this contributed to his downfall. Mary Shelley seems to have been criticizing Victor for his lack of sociability, his isolation.

Eleanor: Sociability was incredibly important because it was the vehicle by which knowledge was spread and shared during this period.

Jason Kelly: If we think of *Frankenstein*, the book itself, as an example of how knowledge is created in this period. I think it provides a nice counterpoint because Mary Shelly isn't secluding herself and disappearing for months on end to create this thing. She is involved in a community of people who are intellectuals and she's exchanging with them every single day. They're all integrated into these grand international networks. And that is how they see knowledge being developed is through communication, through sociability and through exchange. So I think she is criticizing Victor Frankenstein for his isolation, whether that is what creates evil, that's a different story. That's a very interesting story. Because Mary Shelley was a huge fan of Jean Jacques Rousseau, the French philosopher. And if she agrees with him to some extent, then she might argue that in fact, the evils that humans do, or the evils that humans become might be more associated with society.

Christiane: Rousseau believed that the more society interfered with a person, the more evil they were apt to become. Jason says that this is exactly what happens with Frankenstein's creature.

Jason Kelly: It's society that turns the creature evil because the creature all it wants is love. It seeks protection and it seeks love over and over and over again, it gets denied that love and protection. Personally, I think Mary Shelley is saying that society is evil for shunning this thing that it should be protecting, as opposed to the creature being inherently evil itself.

Christiane: So Mary Shelley has woven a pretty complicated tapestry of right and wrong here.

On the one hand, she's criticizing Victor for his complete isolation, his lack of sociability. But on the other hand, she also seems to be saying that society is what made the creature evil. This might seem completely contradictory, but it actually makes sense. Mary Shelley, isn't saying that just because you interact with society, you'll become a murderer.

Jason Kelly: Perhaps it is that the creature's interactions with society unmediated by any parental figure is the thing that makes the creature evil. It's not being left to nature, but in fact, it is the engagement with society without protection.

Eleanor: Monique Morgan pointed out that like the creature, Victor Frankenstein himself was left to his own educational devices by his father.

Christiane: To teach himself science, Victor reads completely outdated books. His father knows they're outdated, but doesn't take the time to help him find the right kind of information.

Monique Morgan: His father doesn't sufficiently explain to him why those ideas have been superseded. He just labels it sad trash, but doesn't bother to intervene more strongly. So Victor has all of these grandiose ideas of what should be possible via experimentation.

Christiane: Victor Frankenstein's ability to be any kind of an ethical scientist is ruined because his education happened in isolation.

Monique Morgan: That seems to be what triggers Victor's ability to create the monster. There does seem to be a potential critique that Victor isolates himself too much, right? That he learns much of what he's able to do when he goes to college and studies natural science, but he makes his creation disastrously completely isolated in an attic room where he's not in touch with his professors. And he's also not in touch with his family. He stops writing letters home during this process of very single minded work towards his goal. So there seems to be the implication that isolation is a negative trait that if he had been more socially and intellectually grounded in a network of other people, perhaps he would've been more likely to have been warned of some of the negative consequences or thought about them himself. There are other aspects of the novel where I think Mary Shelley's stance or the stance that she expects from readers is much more ambiguous, but it does seem to me that that isolation and a lack of any thought about the broader consequences are clear mistakes in the novel.

{short musical interlude}

Eleanor: We've been discussing the importance of an idea called sociability to the ethics of 19th century scientists and intellectuals and in Mary Shelley's novel *Frankenstein*, Victor Frankenstein isolates himself from everyone, his family, his friends and other scientists in order to create a living being from parts of dead bodies. According to the scholars, Monique Morgan and Jason Kelly Victor's isolation, his lack of sociability caused a lot of the problems in the story.

Christiane: While scientists and innovators working today, don't use the term sociability anymore. It does seem to be a concept that has retained its importance. When I spoke with the philosopher and ethicist John Basl, he told me that at first glance, it seems impossible to be a reclusive scientist like Victor Frankenstein in the 21st century.

John Basl: It just seems sort of like impossible to do the kind of science we do today in isolation. Um, but the exception to that is actually sort of computer engineering and computer technologies where a programmer can sort of design things on their own without much input or oversight from any sort of community. And there's some new sort of, I forget the term, but it's like backyard biology or something where people are doing biological experiments in their garages. They get these kits and they can do sorts of certain sort of things. And so there's some worry that you could create a biological entity that was not sort of subject to scientific oversight.

Christiane: John Basl explained that oversight is incredibly important to maintaining an ethical world in science and technology.

John Basl: I tend to really like oversight models where what you do is you develop a research protocol for a given domain. Like here's the experiment I wanna do. Here's the, what I think the ethical implication or the ethical costs might be. Here's the ways I've tried to minimize them. And then that goes to a committee, a committee composed of a diverse group of experts, experts that include experts in that domain of research. So they can say this is very likely to fail, or this is not likely to work, or it's a waste of time that community's also gonna consist of members of the public who can represent public interests or sort of rec can recognize their fears or their worries or their hopes. And also I think ethicists and philosophers, people that can sort of see the conceptual distinctions that are important and recognize what the ethical challenges really are that you may have missed. And then you have this sort of approval based model, and that's what we do for human subjects research. And that's what we do for animal subjects research. And for lots of domains that committee model might be appropriate now for other domains, let's say chemical warfare research, you might just have a strict set of rules, like you're allowed to do this, but not this because there it's easier to trace out what the ethical costs are and which ones we want to avoid. So what the right framework is, is gonna be domain specific.

Eleanor: Oversight is a key component of working ethically in science and technology today. And according to John, oversight means that scientists and innovators shouldn't work in isolation like Victor Frankenstein did.

John Basl: There's a social obligation or a moral obligation to not do work in isolation like that. And that does come at a cost. There is a real risk that the scientific community could shut down research that wasn't seen as sort of paradigmatic or didn't fit the mold. And so thought is thought to be useless and wasteful so they don't get funding for that. So they're not allowed to pursue it. It also undermines individual's freedoms to just sort of do what they want. But I think the general benefit of the scientific community is that science ends up having social costs and benefits. And so it's sort of something that should be subject to democratic oversight.

Christiane: John Basl says that at the end of the day, oversight is worth the costs.

John Basl: There's a clear obligation to subject your work to ethical oversight, to make sure whatever research you're is sort of gonna be governed by some ethical beliefs that aren't just your own.

{short musical interlude}

Eleanor: So far, our experts have given us a lot to think about Monique Morgan and Jason Kelly have illustrated the ways in which Mary Shelley highlights the dangers of working and learning alone in her 1818 novel *Frankenstein*. And the ethicist John Basl has explained that scientists and innovators working today have a similar ethical obligation to subject their work to oversight or guidance from a larger community.

Christiane: At this point in the show, we're gonna welcome back our resident ethics expert, Andy Collison, to discuss all of these ideas,

Andy: Happy to be back. Before we jump into our discussion, we should note that when we talk about innovation, we're talking about it in pretty broad terms for us, an innovation could be anything from a social media network, like Facebook to an autonomous vehicle.

Christiane: We start off our discussion by talking about what meaningful oversight actually looks like.

Andy: So one example is bioethics international, and they sort of function like a pharmaceutical watchdog. And what they've basically done is they've created this scorecard for ethical practices in the production of pharmaceutical products. And so each drug out there gets a kind of scorecard as to whether or not it followed best practices. The pharmaceutical company is sort of at the mercy of, of these kinds of watchdog groups, where they have to now start paying attention to the origins of their products. And there's a, there's a barrier. I mean, the pharmaceutical industry resist this and they'll resist, resist, resist, resist, but eventually if enough people care about it, they can't resist because they're not gonna get enough buy in, um, from the general public, uh, to start using their products.

Eleanor: I think that's definitely where our struggle is with technological innovation right now is that nobody cares really how it's being innovated as long as we can get the next iPhone or whatever. Um, so I think that's definitely the largest problem we're gonna face in more ethical innovation is making sure that we care about how, um, how that next product is created and like how they're making it.

Christiane: I hesitate to like embrace market based solutions, kind of like bioethics international, because

Eleanor: I don't trust that a good person will step up and create an oversight company that people will accept when it comes to things like iPhones or maybe social media innovations like that.

Andy: I don't think I'm as skeptical about some of these market based solutions. Um, I mean, I think history's filled with examples where the general public just didn't care and then enough people started caring that it, it got kind of turnaround. I mean, people didn't used to care all that much about whether or not their food was organic or not, and now Walmart's selling it.

Eleanor: But I think it's more a problem of, are there actual underlying issues behind maybe the organic food that Walmart is selling? Maybe it would be better if there was an organization like a separate non-market run organization that was just checking these different innovations, forcing them to wait until we were sure that there had been sufficient oversight and that it was gonna work from like an ethical basis as well as just a market basis. Yeah, cause I just don't trust. I don't trust the market <laugh> I don't trust anybody involved in the market. And I think, I think, you know, in the, at the turn of the 20th century, you saw that happen right where companies were poisoning their customers and lying about it. And it wasn't until the, you know, the FDA, the food and drug administration was created that that problem was solved.

Andy: To some extent. I think there's a dilemma here though. So option one is some kind of independent organization that just plays the watchdog role and you know, puts market pressure on innovators to do some kind of best practice ethics check for their innovation that's option one, option two is to have an organization like that, that we have some kind of federal mandate that you can't do anything until you, until you've passed this test. Now, the problem is I think, um, if you're gonna get a regulation like that through it's because there are enough people who care about regulating in this way, right? It's, it's gotta be at least some, it's gotta have some popular support. If you're gonna get a law passed, that gets the regulation.

Eleanor: I think it's still really important to have the government involved though, because even when it stops being popular, it will still be regulated. So even when people stop caring about the next iPhone or stop caring about organic food, the government will still make sure or a government organization, something that's not connected to the way the market is working. They'll still be checking and there will still be oversight even when people are not as interested.

Andy: An added risk and adding to that, actually it could be that you get enough popular opinion to make it possible, to pass some kind of regulatory law. But the, the amount of support that you might have, there might not be sufficiently strong to make a company scared by say, bioethics international watchdog stuff. I mean, you might need way more popular support, um, way more anger at an industry to get something like bioethics international, um, to work.

Christiane: We continue our discussion by exploring whether or not scientists and innovators working today have the same sorts of obligations as scientists in the 19th century to be sociable

or to work transparently with others.

Andy: I think it's kind of lost on people. That moral counsel is a good thing. And that thinking through an ethical issue is something that's really, really hard to do and people can get better at it. And there are some people who it would be good to talk to if you're thinking about doing something. So I think it's easy to start thinking about going off and doing something. Um, but you know, one really, I think important thing is to be socialized with other people in the community who might have some experience thinking through complicated moral dilemmas. And they, you know, if you're not doing that, if you're not having conversations with people about what you're doing, you could run a foul.

Eleanor: And certainly Frankenstein never seemed to have any interest in consulting with anyone about anything he was doing. That wasn't even really a thought that crossed his mind, which maybe if he'd even like talk to a friend or talk to a professor, he would have maybe changed his approach or changed his actions somewhere along the line.

Christiane: Sometimes scientists might argue that they need to do their work in secret, and that secrecy is somehow necessary for whatever they're creating.

Eleanor: And I think that actually goes completely contrary to the way the scientific method is supposed to work. Um, for science to function properly, you need to be able to do your experiment again, you need to show how it happened and you need to show people that it could be repeated and that it is beyond just a hypothesis that it can like move into a theory that it's something that is actually happening. And it's not just you sitting in a room making stuff up.

Andy: But there's enormous incentive to be the first one to have done it. Right. So even if repeatability is important in the sciences, I can still imagine a scientist saying, well, yeah, but I wanna be the first one to do it. And if I'm gonna be the first one to do it, it would be better if I did it in secret. And here's one of the reasons why I think a scientist might legitimately say no, I should be able to do things, um, not transparently. And it has to do with how the incentives are structured to, to fund science. Uh, there's two big ways to fund science is to find something or establish something that has a useful market application that you can get a patent on and you want to be doing that secretly. So there's that kind of incentive structure built into keeping science done secretly there's another kind of incentive structure, which is a little bit more indirect, but it has to do with grant funding. That's another way in which, um, science gets funded.

Eleanor: See, all of this is making me think that I wish that science was even more of a collective process than it already is. I wish that the funding didn't incentivize like one scientist, like beating everybody else to the punch or like one person or one team like getting there first. Right? I wish that didn't matter enough or as much because I think that gets in the way of ethics, but it also gets in the way of like oversight, um, all these other things that we've just been talking about and to build off that why is getting credit so important when we have greater goals,

hopefully to further, it's not about maybe having your name. Well, maybe it shouldn't be about having your name on it, but rather that this life saving drug is created or rather that other better things are happening instead of you just becoming famous.

Andy: Some scientists may just want the quote unquote bragging rights and have it be named after them. But part of the being the first one to do it is actually tied to employment. A lot of scientists around the country are employed at universities where their tenure, uh, and promotion and advancement hinges on them, having done something cool and noteworthy in their research. Here's another reason I think a scientists might want to sort of keep what they're up to under wraps. And actually the internet age has, has really brought this about, there are a lot of examples of scientists just being the target of an angry ill-formed internet mob, so that they're doing research on something that, you know, goes against some groups, moral scruples or something like that. And suddenly they get targeted for doxing and internet harassment and things like that. And, uh, you might think that transparency in an internet age, uh, runs the risk of you being the next targeted professor on some site that, you know, just calls out the internet trolls on you.

Eleanor: And I think that brings up some ideas of the problems, both of the incentive community and of like the incentivization idea. And also the problem of the internet age is maybe there needs to be a more specific scientific community in which it's transparent, but maybe there can be lines within that transparency. It doesn't need to be everyone in the whole world needs to be aware of your research. And like this needs to be published openly. It maybe should be an internal review kind of thing.

Andy: And I think that's, that's absolutely the way it should go is whatever the transparency is. It can be transparency to a smaller community. Um, but I do worry that if you brought in all the stakeholders, including one member of the group, that would just be absolutely morally outraged by this in an internet age, it would be very easy for that to leak out to the proper, you know, channels where, you know, you could stoke the flames and, and bring all, all, all the internet trolls. So there's, I still worry that there could be some kinds of things that, um, even in a smaller circle, um, you know, you might still have some concerns about privacy

Eleanor: And even in a smaller circle, I guess you'd have to be careful about who is in that circle and how inclusive that circle might be. Cuz we could just end up in the pitfalls of white men doing science, not bringing anybody else in. We wrap up our discussion by exploring how much scientists and innovators should involve society at large in their decision making.

Andy: I think there are a lot of reasons why scientists might have an obligation to involve others in the decision making. Um, this is particularly true when the research involved, imposes potential risks on other people. I think anytime your research poses a risk, uh, that person has some right to talk to you about what you're about to do and should have some say in whether or not it gets done.

Christiane: And I love that because so many, you know, entrepreneurs, it's just such a common thing for entrepreneurs to say like, yeah, I gotta break a few eggs to make an omelet. You know, that kind of idea, right? Or the idea that like, well I might be hurting a few people, but I'm doing it for the greater good. Um, and I think it would, it would at least force people to think more concretely about the actual people that they might actually be hurting.

Andy: I can't think of any other domain of social interaction between people where we don't have very strong views, that if you pose a risk to somebody, they don't have some right to ask you to stop and be involved in the ultimate decision of whether or not you get to continue to do that thing.

Eleanor: And to take it back to the text. Um, if, as we've said, a bunch of times, if Victor Frankenstein had involved anyone else, perhaps his innovation and his actions might have been better. Um, and part of that is he didn't allow his education to be a kind of collective process. He only read his own favorite books. He didn't allow himself to be influenced by people who knew more than him like his professors at the university or like his family that maybe had stakes and things. He never involved other people in his decision making. And obviously that turned out really badly for everybody.

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Christiane: Thanks again to Indiana Humanities for inviting us to take part in One State, One Story Frankenstein with a special episode of Examining Ethics, learn more@indianahumanities.org. We're also grateful to the national endowment for the humanities, for their generous support of One State, One Story Frankenstein. Any views, findings, conclusions, or recommendations expressed in this program do not necessarily represent those of the National Endowment for the Humanities.

Andy: Thanks for listening. Check out our show notes page examiningethics.org for links and more information on all of the topics we discussed today. If you want to learn more about our partner, Indiana Humanities, visit them at indianahumanities.org.

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Christiane: Examining Ethics is hosted by the Janet parental Institute for ethics at DePauw University with special support on this show from Indiana humanities and the National Endowment for the Humanities, Christiane Wisheart and Eleanor Price produced the show with

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