Episode 21:
"Medicine and the Concept of the Body"
ft. Freya Marske

Transcribed by:
@banana_l0rd

[0:00]

M: You're listening to Worldbuilding for Masochists.

R: And we're wondering why we do this to ourselves.

F: You are statistically less likely to end up with an injury compared to other kinds of building. I am Freya Marske.

M: I'm Marshall Ryan Maresca.

R: I'm Rowenna Miller.

A: I'm Alex Rowland, and this is Episode 21: Medicine and the Concept of the Body.

[intro music plays]

A: Helloooo Freya Marske, welcome to the podcast!

F: Hello!

A: It is so lovely to have you visiting from *your other podcast*, which I have never heard of in my life.

F: [laughs] No, of course not.

A: Would you like to introduce yourself to our darling listeners?

F: Certainly! So I am Freya Marske, I write fantasy and romance and the occasional sprinkling of science fiction, and yes, I am one of the hosts of a podcast called Be the Serpent, which I don't think *any* of you are at *all* familiar with.

A: [laughs]

F: And I am here today because my day job involves a lot of dreaming wistfully about ways in which the healthcare system could be better.

M: So many ways. So many ways.

A: Wonderful, wonderful. We are looking forward to taking advantage of your doctorly wisdom. Before we get started though, I think we have a small announcement we haven't discussed on the podcast before, is that correct?

M: Nah, I think we did mention it in the last episode, but we should keep mentioning it so that…

A: We should, we should keep mentioning it. We are going to be special guests at DFWCon, that's the Dallas Fort Worth Writer's Convention, which is happening in June, right?

R: Yes, June.

M: June, yes.

A: Yes. They have never had a special podcast guest before so we are their inaugural one, we're going to be recording two live shows there over the weekend, which is pretty intense but I'm looking forward to it, and I believe their keynote speaker is Delilah Dawson this year?

R: Yes, it is, it is Delilah Dawson, they just shared that with us, so that's pretty exciting and I'm excited to hear her keynote.

M: She's amazing.

A: She is pretty cool.

M: She's amazing, she's brilliant, she's gonna be great.

A: Yeah, so if you are in the Dallas Fort Worth area, or the Texas area, or that is something that you might be interested in going to, keep that on your calendars, depending on how the coronavirus thing goes, more information will be forthcoming about whether or not the convention happens but as for right now, it is still on the books.

R: Yes. And we are still planning to be there as of today.

A: As of today we are planning to be there, yes, in June. Fingers crossed. Anyway, speaking of-

M: As of today, which is such a great day to be talking about medicine and how that affects your worldbuilding.

R: It's timely, it's timely.

M: Because we're in the midst of an official pandemic. Hooray.

A: Yeah. Hooray. According to the World Health Organization.

R: We swear we did not plan this.

A: Listen, so on Be the Serpent we had the same issue, we just recorded an episode about plague narratives.

F: Actually about plagues.

A: And we recorded that back in February. And then coronavirus really started becoming a thing and we were like, *yikes*… dang. So yeah. Let's talk about medicine, though.

R: So I think we can even kind of back up a little bit and go with bodies.

A: OK.

R: Like, who has bodies? I know it sounds like a stupid question, but when you're dealing with fantasy worlds, you can certainly have situations where characters or even protagonists *don't* have bodies.

A: Right, non-corporeal.

R: So I think that we can say for the presumption of the fantasy world that we're building and for a lot of writing, yes, people have bodies, characters have bodies, but it is a moment where you-

A: I don't think we have established any ghosts.

R: I don't think we have established any ghosts or… energy creatures of any kind?

A: Yeah, I don't think we have.

R: Anything like that. But that is a thing! That is a thing that happens, and those would be different conversations entirely about how you think about health and sickness and wellness if you're not talking about corporeal bodies.

F: Well, now I want a story about a ghost being a vector for disease.

A: Oh yeah, heck yes! Yes!

M: Oh, wow!

R: I like that! Write that now!

All: [laugh]

A: Hell yes. I was about to say, oh man, I wanna hear about ghost medicine, but that's even better! So when we're talking about medicine and bodies, that ties into a bunch of stuff about the cultural worldbuilding, the way that people think about their bodies, and the sort of self-identity and relationship that you have with your physical form, right?

R: Definitely, and I think that when we think about self, there are a lot of ways in which our body and how we imagine our body and how we perceive our own bodies informs and is informed by self. So that's kind of an interesting jumping off point, even just asking your character, how does your character feel about their body? Does your character see their body as healthy or as not well in some way - that can reveal a lot about how the character is understanding health and wellness or the opposite of that.

A: Mm-hmm.

F: And on a cultural level, to what extent is somebody's body considered their self.

A: Right.

M: Yes.

F: Like in our culture, is it really considered to be a reflection of the person within it, and if so, what are the different ways in which people choose to change their bodies because of that?

A: Right.

R: Because we have all kinds of body modification that we do, from tattoos to hair color-

A: Clothing.

R: -to even how we dress ourselves, and all kinds of cultures have different kinds of body modification that reflects how they think about a body, how they think about how they occupy a body.

M: And then if you add in all the options that magical body modification can potentially give you if you do that in your worldbuilding, then that opens up whole new doors about what your body can mean in terms of identifying of yourself. Or if your body is one singular thing because of

what you could possibly do magically. If magically you could split yourself up into two or three or four, which one is *you*, are all of them you, that's some fascinating stuff you can dig into.

A: Yes!

R: Multiplicity!

A: What I want is magical tattoos, but like the bad tattoos that you get when you're in college and you're drunk one night, you know, like, "This is a magical tattoo that I'm super ashamed of, it does, like, one thing and it's ridiculous!" But that doesn't have too much to do with medicine.

R: [laughs]

A: Let's turn a little bit more towards-

M: "EEEK! Why did the lamp turn off when you came in?"

A: "I have this stupid-ass tattoo I got when I was, like, 19, let's not talk about it."

R: [laughs]

A: But let's talk a little bit more about health and wellness and how a fantasy culture might define being healthy. Freya, as a doctor, do you have anything to say about this?

F: Well, I think the definition of health has changed a lot over the years, and where we are at the moment I guess, from the model of healthcare that I practice, there are certain definitions that you can look up that will say this is what it is in words, but I agree that there is a difference between the definitions of health, of wellbeing, and the absence of disease, because disease and illness also have specific meanings in a cultural context. And when you think about what does it mean to be well, I think we also think about things such as spiritual wellbeing and mental wellbeing and emotional wellbeing and social wellbeing, and obviously I think if you're practicing medicine in today's world you are considering someone's health along all of those axes. But a different culture may not. Depending on how individual they are, or how much stuff they actually put in the impact of a greater society on an individual.

[8:22]

A: Yeah, there are several cultures which consider excessive greed to be a kind of illness, like someone that is just focused on consuming more than their fair share, or hoarding things, or just going to certain extremes of needing more than other people is considered an illness, and so there's definitely different kinds of ways that a culture can view what is even considered illness and sickness.

F: And how they define those sicknesses. There's a really interesting field called transcultural psychiatry which is to do with how different cultures present when it comes to mental distress, and specific kinds of mental illnesses that are defined or identified as arising predominantly or solely in particular cultural groups.

A: Interesting!

F: Because it is considered to be- I think it's something that's not amazingly well understood as to why an illness with a specific set of symptoms arises only in a certain group of people who have a culturally consistent explanation for what it is. I mean, even in our society there are particular mental illnesses that we think of as, oh yeah, this would be universal, this is just how mental illness is, this is just how brains be when they are not functioning well, but you may not see manifestations of things that would appear in the DSM in other cultural groups, and they would have completely different manifestations of mental distress with different labels and different meanings, on possibly a religious level but definitely on a cultural level.

A: Oh, that's fascinating.

R: That's really interesting too just because, if you think about that you have society and identity-based expressions of mental illness in some ways, for example that men and women often will express depression differently or will act out anxiety differently, kind of based on performative stuff in some ways, what's expected, and so you kind of cycle back into that, but it absolutely makes sense that society or culture would impact how we order our behaviors and how we set up how we perform, even when we are expressing distress.

A: Right. Right.

F: Yeah, because you can think of symptoms as something that is not- something that arises out of a complete- I'm trying to think of the best way to say this. Symptoms do not arise in a vacuum. And especially when you're talking about that interaction between the body and the mind, symptoms arise as a combination of an internal state and the way that you were socialized, the way that you were brought up, the beliefs that you yourself have about illness and body will change how things manifest. I mean, the placebo effect for example - your own beliefs as a member of society are gonna change how you experience illness and how you manifest illness.

R: And even the language that we have to describe symptoms, one person is going to describe a certain kind of pain in a different way than another person does and the question is are they actually experiencing it differently, or is the way that we are attempting to describe something just different.

M: But also there is that cultural element of if you are experiencing symptoms and you then report them accurately knowing that that report is going to be trusted, is very different than

somebody keeping those symptoms to themselves because they know society won't accept it, and things like that. I was thinking about how somebody made this comment about how Star Trek: The Next Generation about how everybody, when something weird is happening, will just come into the room and say, "Hey! This weird thing is happening to me!" and everyone says, "Oh, OK, let's find out what that is a deal with it" and nobody's just like, "You're seeing things" No, every time it's like, "OK, we are accepting what you say at face value and we will help solve this problem for you" and that's always what happens there. But if your worldbuilding doesn't allow for that then you're gonna have something different happening.

A: Well, that's not just the worldbuilding. That's sort of the structural requirements of a single, what, 20 minute, half hour episode playing into the necessity of the worldbuilding. Because if you have a limited amount of time to tell the story, half an hour, so I don't know how long Star Trek episodes are, then you don't really have time to waffle on, "Oh, we're not really gonna believe you the first time you say it" You have to be like, "Here's the premise of the problem that we're solving this episode, everyone immediately believes you, now we're moving on with the plot" right?

F: I think that's something to keep in mind if you're writing fiction, that if you are presenting a reading audience, a fiction-consuming audience with a set of symptoms, especially from your protagonist's point of view, there is an expectation that it's gonna turn out to be interesting or plot-relevant in some way.

A: Right.

M: [chuckles]

F: And they're not just gonna go to their GP and their GP's gonna do some investigations and come back and say, "Are you stressed?"

A: [laughs] "Well, probably."

F: Unfortunately, as someone who works as a GP, you try to take that incredible open mind, you know, new symptoms, could be anything, let's investigate, but the vast statistical amount of the time when it's a weird cluster of symptoms that doesn't make sense, there might be a weird thing underlying it or it could be stress.

A: My dad was a medical doctor and he used to have an aphorism for this which was: when you hear hoofbeats, don't look for zebras. When you have this series of symptoms, you look for the most common and probable cause for it. And stress is a really common problem that can cause a lot of knock-on effects.

R: Yeah, and I was gonna say too that I think what Freya was saying about a reader has an expectation going into a book that if symptoms were described, something comes out of it, and

there's kind of an arc that we expect to happen, and I think that's a really interesting thing to acknowledge, and you don't have to challenge that but I think that it makes the presentation of chronic illness or chronic pain difficult in fiction, because readers don't expect to have a tagalong the whole time? And so the idea that often in fiction, illness or disease or the opposite of wellness is acute, it is something that happens and then we surpass it, move past it, overcome it, it was a narrative, it was an obstacle, but in real life for many people illness is not acute, it's chronic, something that they live with their whole lives, and I think that that kind of starts to skirt some questions of ableism in fiction, and in fantasy in particular because so often we do have narratives that want to jump past obstacles quickly or want to use-

A: Wave a magic wand and you're cured.

R: Exactly! Because we have magic so we want to make it like, oh, we'll get past this, we'll move past, and I think that that's kind of an interesting place to examine preset notions of how stuff is supposed to work in fiction.

F: Because I think if you have a character who comes into the narrative with an injury or a condition or pain and just lives through the whole narrative with it, acknowledging it, showing the impact on their life and what they're doing, it doesn't necessarily have to be a plot point, but as readers and also as writers, I think we're also struggling to find the middle ground between that representation of how life is for real people in our world, and this hammered-in idea that you shouldn't put extraneous things in, that you're presenting the reader with red herrings, or that that's just something that doesn't need to be there, why have two characters when you have one person? Why would you give your characters this thing that is not actually going to be important? And I think we are seeing a shift from that very streamlined minimalist character and storytelling to actual representation and acknowledgment that people can have small things about them that might impact the way they go about their lives, even majorly impact the way that they go about their lives, that aren't necessarily relevant to the prophecy or the magical plot.

A: Right. Right. *In myyy book*, not one of the ones which has been published but one that is on my agent's desk right now, my main character has chronic severe anxiety. And there's ways in which this interacts with the plot, but it is something that he starts the book with it and he ends the book with it and he's always going to have it, but the character arc that happens is more his relationship to it, and how he views it and himself, and how he learns to change the way he thinks about it and change the way he deals with it. So there's definitely still story arcs that you can tell with this that end with it not being treated as an obstacle or something that can be cured.

F: And on a worldbuilding level, you have to decide how does the character's context think and feel and judge the condition that they have. Is somebody with chronic anxiety, is that an acknowledged thing in the society that they live in? Is it something that we know how to treat it or at least how to approach it? Or is it something that would be considered an unacceptable weakness and must be hidden?

A: Right. Right.

F: I'm thinking about Mary Robinette Kowal's *Lady Astronaut* books where the character's anxiety is a huge part of the stumbling blocks for her in the first book because it is perceived as a weakness, that she knows she has to hide it. And that's not to do with her, that's to do with the culture she's in.

A: Right.

R: So I have a question. When we're writing fantasy, we're often writing a historical analogue of some kind, it's kind of like the Middle Ages, or it's like the 18th century, or it's like the Renaissance, or whatever, and medicine was not necessarily well-understood or understood in the same way that we understand it now during those times. So how does that impact how you are writing the world and how you are writing people's interaction with their bodies and interaction with health and sickness?

[18:37]

M: With me I know it's one of those things my editor is always making sure I'm paying close attention to, where I'll do things where characters will get in a fight or get stabbed in the leg or bashed across the head, and she's always like, "Give them a reason and a chance to recover, or make sure that you're taking care of that".

A: [giggling]

M: Which is why in all of my different series, I always have some secondary or tertiary character who is a doctor or at least doctor-adjacent who can be like, "OK, I'm gonna sew this up now" and make a point of those elements.

A: Freya, I'm gonna make a callout post against you.

M: Uh-oh.

A: You also kind of do this, don't you. [laughs]

F: Oh, I like injuring my characters a lot, yes.

A: Yeah. [laughs]

F: But at the same time, I know how to injure them in such a way that I can then have them be where I need them to be for the next- sometimes it's just mildly aesthetic injuring.

A: Sure. Sure, sure, sure.

F: So there might be some alarming bleeding and there might be a sexy scar later on, but they're not actually not gonna be able to get through the action scene that's coming up next.

A: Right, right.

M: And also, people can take a beating. Like I told that story a few episodes ago about when my great-great-grandfather and his brothers beat the living hell out of the guy who was having an affair with his wife and stabbed him multiple times and shot him three times - in 1905 - and he lived!

A: Yeah.

F: Yep, people are pretty resilient, and I think you can take a lot of advantage of that. You know, even before we had penicillin and any good way of treating infection, people's bodies still fought off infection, it's not necessarily going to be unrealistic if someone lives through a wound that might have been statistically very dangerous. Sure, if it killed half of people, your character can be one of the half of people it doesn't kill. But, again, if you start introducing things like, "Oooh, it's starting to look red!" "Oooh, pus is coming out!" you're doing it for a reason, and I think the readers will have an expectation that this is gonna become a thing.

R: And I think too, when we think about injuring our characters in historical fashions, the acknowledgment that a lot of people historically did not die of the injury, they died of the infection afterward, or they died of, you know, got transferred to a hospital and caught some typhus!

A: Caught some typhus! Oh no! [laughs]

R: And it's not always exciting the way that people went out historically, so either playing with that or ignoring that because you do want to tell a decent story and "got the typhus" is not always the most fun way to tell it.

F: Looking back at the history of medicine, there's actually a lot of language that you can play with with fairly nonspecific meanings when it comes to how people thought about and described symptoms. So one of my books is a historical fantasy and one of the characters' mothers has what we would probably think of as a chronic pain syndrome, possibly secondary to an inflammatory arthritis, and depression secondary to her chronic pain, and the words used by the characters are "rheumatism" and "melancholy".

A: Mm. Yes.

F: Because those were the words that they had to describe that kind of symptom cluster. These days if you said the word “rheumatism” everyone sort of knows what you mean, but a doctor would say that’s meaningless, that doesn’t actually mean anything in terms of our current knowledge of disease. And probably in 50 years there are gonna be words that we are using today to describe symptom clusters or to describe illness syndromes that are just as meaningless, because we have a sharper and more specific understanding of what caused them.

R: You know what one of my favorite historical terms is that I ran across? It was in an 18th century treatise and it was “the laudable pus”.

[beat as everyone absorbs this]

A: OK, what’s that?

R: And it was the wound is forming pus, and, well, there is a healing process going on. And now we know that pus is not exactly a good thing to see when a wound is healing, but apparently this particular person writing the treatise believed that it was a sign of improvement or healing or the body is responding in some way, so “laudable”. It was the laudable pus.

F: I mean, technically pus is part of the body’s immune response, it’s your body trying hard to get all of those white cells to where they need to be.

R: [laughing] Right.

A: That’s fascinating. Freya, perhaps you can tell me this, why were they so obsessed with bloodletting as a thing?

F: I’m not entirely sure, because I haven’t read a lot about the very specific-

R: [whispers]

F: There we go, Rowenna knows.

A: Rowenna knows!

F: To the best of my knowledge, a lot of it was to do with this sensation, like we know that inflammation is a basic response to a lot of injuries and illnesses and so people would be flushed, they would look hot, they would look warm, they would look to somebody whose knowledge of anatomy or medicine is from “you know people have blood and it goes around and it’s red”-

A: “We know people have blood!” [laughs]

R: Yes, true.

F: It would look like an overdose of that. The hot red stuff. You have too much, let's get rid of some.

A: Ohh.

R: And actually, a prime reason that people actually really did think that bloodletting was working was that they thought you had about twice as much blood in your body as you actually do. So that was part of the weird calculations is they really did think you might have too much, or in a more precise way, an unbalancing of the humors, so if you let some of the blood out then the humors will re-balance themselves, so they were basing their calculations off an improper understanding of how much blood you have, and then believing that if some was let out then your humors would re-balance and, again, this idea that you could be choleric or phlegmatic or these different terms of how-

A: Melancholy and sanguine are the other two, yeah.

R: Melancholy and I don't remember all of them, but you would re-balance the humors. And there's also, if you ever give blood, I don't know about everyone else but you kind of feel good afterwards, like "I did a good thing!"

A: Really?

R: This kind of lightheaded euphoria.

F: You get lightheaded and quiet.

A: [laughs]

R: You know, lightheaded euphoria, and so I think that in some ways they were actually misinterpreting that as, "Oh, you feel better!" Like, no, I'm kind of in mild shock and experiencing blood loss, but, you know. I feel good about myself! [laughs]

A: I've gotten the lightheadedness but I haven't gotten the euphoria, I just feel kind of blehhh afterwards.

F: Yeah, that's true, bloodletting-

R: I felt, last time I gave blood, like, "I did a good thing!" Like, no dear, you're about to pass out. [laughs]

A: I mean, yeah, you get the euphoria from doing a good thing, but that's more emotional than physical.

M: I was gonna say, that might also have been the placebo effect of "this is a thing that's supposed to help me, so therefore I must be feeling better because why would the doctor do something that wouldn't help me, so therefore I am feeling better."

F: Yeah. And I was gonna say that one thing from a worldbuilding perspective, I love the idea of medical systems that contain some out of date things that nobody has bothered to test that rely on a completely outdated model. So bloodletting was done long after we actually believed in the four humors as the primary way of understanding a body and understanding sickness, but what you said about people believing something is good because a doctor tells them, one of the big shifts that has happened, I think over, the last century is also to do with the extent of power distance between a doctor, between a medical professional, and a patient. And from a social worldbuilding perspective, that is something that I think about quite a bit, because I do a bit of training of general practice registrars, doctors who are gonna become specialist GPs here in Australia, and quite a lot of the people who come and join the training program were trained overseas in different cultures.

And I have done some really interesting workshops on social differences between Australia and some of the other cultures that people are coming from in terms of core social beliefs and how they relate to medicine, and one of them is to do with social distance of prestige, and the extent to which doctors are considered to be authority figures that are not to be argued with. For somebody who grows up and trains in a society where that distance is very large, and they are used to doctors not being questioned, coming to somewhere like Australia where it is considered that people can go out and find their own health information, they should be getting very informed consent, they can have a conversation with their doctor about what's best for them and say, "No, I don't agree" or, "What's your evidence for that?" - that can be very, very difficult, and those people can be perceived as being bad doctors because they're not communicating in a way that is socially acceptable in their professional role.

A: Fascinating.

[27:31]

R: There was an interesting book - and it's been a long time since I read it and thinking back on it, there may be some problematic weird things about it - but the concept was really interesting, and it was called *When the Spirit Catches You and You Fall Down*.

F: Mmm, that's a great book.

R: Thank you, I'm trying to remember things about it, but it's following a family with a child who has epilepsy, if I'm remembering correctly, and just the ways in which this family who are from

Vietnam understand the illness, and understand what they are supposed to do about it, and understand it even as an illness, because they actually also see it, if I remember correctly, as there's a spiritual element to it, and just the language barrier for one thing, but the ability to communicate those ideas from their doctor and the rest of the medical staff working with their daughter - it's a really interesting read about that, you know, how do we understand who a doctor is in relation to me, how do we communicate medical ideas, how do we communicate concepts of illness, how do we communicate concepts of spirituality.

F: Yeah. I was just looking it up because I was trying to remind myself of the details and yeah, it's about a Hmong refugee family from Laos.

R: From Laos, thank you.

F: Yep, and then they interact very strongly with the healthcare system in America because of one of their kids and this disease she has. It's a really interesting book about cross-cultural medicine and models of disease, and what can happen when you have a clash between the two.

A: Mm, that's fascinating. Let's talk a little bit more in-depth about building medicine as part of the worldbuilding. One of my favorite things to do when I'm worldbuilding medicine is to use concepts of medicine that are - like we talked about this a little bit earlier - using the concepts of medicine that are a little bit outdated. Do we have any other examples of those that people could use in worldbuilding?

M: Well, there's - what is it? - trepanning? Did I say that right?

A: Yeah, Freya, does trepanning have a legitimate medical use, Freya?

F: Is that the one where you're just knocking a hole in the skull, or is that the one where…?

A: Yeah.

F: Is that what you're talking about?

A: Yeah, where you- yes.

M: Yes.

A: It's not so much knocking a hole in the skull, it's drilling a hole in the skull.

F: Drilling the skull. Yeah, yeah. t's still a medical procedure that is done today, it's just now it is done by a neurosurgeon in a hospital with a proper drill under sterile conditions, but it has a specific application for if somebody has basically got a hematoma inside their skull and you

need to relieve the pressure on the brain, then yes, knocking a hole in the skull is how you do that. One thing that you can build on is that often some of those techniques might have been generalized in an unhelpful way, so that's a technique that has a really useful and specific application for one condition, but if somebody is like, "Ooh, we knocked a hole in someone's skull and all of their symptoms of increased brain pressure disappeared!" you may then find a culture that starts doing that to everybody who has any symptoms of increased intracranial pressure, even if that's due to something that *isn't* blood gathering under the skull.

And you know, you would hope that medicine would test that and be like, "OK, when we knock a hole in the skull and some blood comes out, then it's effective; when we knock a hole in the skull and there's nothing there, then it's less effective." I think medicine and the development of medicine is about trial and error, it's about people using models and techniques for as long as they work or are perceived to work, and then hopefully, ideally replacing them with models and techniques that work better. But you're always going to have resistance. Like of the guy who invented hand washing.

A: I was just about to bring that up!

F: So Lister!

A: Lister, yeah.

F: Whose insistence upon hand washing saved many, many, many lives and revolutionized medicine was ridiculed in his working lifetime for his ideas.

A: Weren't there some people, rivals of his, who were like, "Actually, I think it's beneficial if you don't wash your hands because you're washing off all the good stuff that makes people better"?

F: [laughs] Probably, I mean, this is the thing, it's about what model you are going from, but also about what is in your self-interest.

A: Right.

F: And I don't think you can overstate the importance of inertia, "we're gonna do what we've always done," and self-interest, "this thing would be more difficult, expensive, or make me look bad, so I'm not going to."

A: Time consuming, or I've done it this way all this time and if I'm suddenly proven wrong then that would be shameful for me and I would feel… Even personal embarrassment can be a huge, huge thing, even if no one would blame you for not knowing any better, you can still stick to your beliefs about what is the right thing to do if it's just something that is going to be humiliating for you later on.

F: Yes, and I'm very interested in points of change in medical systems and medical belief, and possibly in five years' time when I do actually get to write the plague novel that I want to write, which I am putting firmly on the backburner for now, I think that's one of the things I want to play with, is this idea of shifts in conceptions of medicine and conceptions of disease when presented with new evidence, and the ways in which those are resisted.

M: The book that you and Rowenna were talking about reminded me: there is an excellent episode of *Babylon 5* where this one minor alien race comes to the station, and their son has something wrong with him, and the doctor's like, "Oh, this is just this thing, I can fix this with surgery in five minutes!" and they're like, "You're gonna cut into our son, are you crazy, his soul will escape!" and the doctor's like, "Are *you* crazy, this is a simple thing" and it becomes this whole battle between what they want for their son and, like, "I can just save your son in five minutes if you just let me" and he eventually then does it behind their backs-

A: Ewwwww, medical ethics!

M: Yeah, because his character was very much this "I know the right thing to do and I'm gonna do it" kind of thing, so he does it behind their backs and he's like, "You're gonna be fine and this is gonna be great and you'll live, so that's better" and the moment they walk into the hospital again after he's done it, they see the son and they're just like, "OH MY GOD! You ruined it!" They knew immediately on sight that something had happened and therefore his soul had escaped.

A: Fascinating.

F: That is fascinating, especially from a medical ethics perspective, like this is a thing that happens, this is why there are wards or guardianship, like if Jehovah's Witnesses - are they the ones who don't believe in blood transfusion?

A: I think so?

M: I think so, yeah.

F: Yeah, yeah. So an adult Jehovah's Witness is allowed to refuse lifesaving treatment if it goes against their religion, and they just have to have it documented that they have explained to the doctors that they understand the risks and they are choosing to refuse treatment. And that is the right of every autonomous adult in this society. *But* the child of a Jehovah's Witness family, the doctors can apply to have medical guardianship taken away from the parents and basically given to an independent board who will make that decision on behalf of the child, because it is considered that that child is not making a decision in their best interest, because they're not allowed to make decisions, their parents are making it.

A: Right.

F: And medical ethics, a lot of that is to do with where you put the balance between respect for parental autonomy and respect for the fact that without this treatment, the child might die. It's only done in very serious circumstances, it's very rare, but it happens.

A: Yeah, yeah. The example that you were talking about, Marshall, is also fascinating because you start wondering, you assume they have this issue with surgery because it has something to do with the sanctity of the body, like, the body cannot be violated in any way, right? And so you start wondering about what the scale of violation is, like if the child skins their knee, is that going to let their soul out? How much of an injury counts? Is it depending on a certain place in the body, like, are legs OK but the torso is not OK? A lot of cultures consider the chest the seat of the soul. Or is it the depth or severity of incision that makes a difference? Is it something to do with how much time the wound is open? Like if it was just a quick stabbing and you hold it closed real quick, does the soul not escape that quickly?

F, M: [chuckle]

A: And that leads into a lot of other questions about what do they consider the soul to be, and they must consider it some kind of physical thing if it can escape from your physical body.

M: Right.

F: And that example you gave means that as well as thinking 'what do people believe about the body?' you have to think of 'to what extent are they correct?' I mean, that situation that you described is positing that there is something about this particular race that *will* escape if the body's integrity is breached in that way, their belief was actually founded in fact. And we've been talking a lot about conceptions of disease and conceptions of medicine that we are saying from a modern anatomy, physiological point of view are incorrect, but you're writing fantasy, what if they are correct?

A: Yeah.

M: Right.

F: What if the four humors are absolutely how bodies work?

M: But also when you're writing fantasy or writing science fiction and you have different fantasy races or you have aliens, you can then set up very different biological rules for each of them, and how the medicine works for that, and how those can interact between - like, if you have a fantasy world where you have multiple races and let's say your medical technology has things like blood transfusions, can elves give blood to humans and vice versa? I mean, if you have a world where elves and humans can mate and create half-elves, then can they also give blood? These are fascinating questions.

[38:00]

A: And if they can give blood- well, it's not so much a question of can they give blood, it's a question of can they give blood without making the person who's receiving the blood fucking die.

M: Well, yes.

A: Because you can give blood from anything, really.

M: That was the intended subtext of can they give blood in a-

A: Successfully, yeah.

M: In a successful way.

F: But we suspend modern medicine and belief for fantasy purposes all the time when it comes to blood. Just look at vampire narratives.

A: Exactly!

F: Like, what is the basis for if this person sucks my blood and then I devour some of their blood, I turn into a vampire? There's nothing! That's just biological nonsense. But it's part of a narrative and we're like, "OK! That's just how vampires work." You can do anything, you can come up with some complete biological weirdness, if it's a different race or it's a magical race or an alien, you don't necessarily have to have it making sense on a biological level because it's magic.

A: Yep, yep.

M: Right. I mean, *Star Trek* does that all the time with their aliens because they have all sorts of cross-species mixed characters, there's half-Vulcan half-human, there's half-Klingon half-human, there's a character that's half-Bajoran half-Cardassian, they've set up a world where every species can have children with almost every other species, that's biological wackiness but it's the rules of that particular world and if you make that the rules of your world, run with it and see what sort of weird fun you can have with it.

A: We were talking about magic; let's talk a little bit more about the intersection between magic and medicine, because in many cultures, those two things are kind of the same. The practitioners of medicine are also your magicians.

M: Yeah, and that also can tie into what the rules of magic in your particular world are, because that's a thing where you need to make decisions of can people just be healed magically, or does

that not work, or does it work in some cases but not others, and that's a fun thing to play with. That was- [sighs] *in my book...*

A: Thank you for doing the funny voice.

M: You're welcome. I made the decision that magic could not be used for healing.

A: OK.

M: And that was a very specific rule that I decided to put in, because I wanted that not to necessarily be an easy step of, like, "Welp, you got stabbed in the chest, but guess what, since Joe is here, he can just lay his hands on you and boom, you're fine" because then also when I needed something to be weird and be like, wait, that's not how things are supposed to work, that was an avenue that I had right there, like, "Oh, that's something different because you can't do that with magic."

A: Right. I think once you start thinking about well, I do kind of want magic to have some healing abilities, once you start thinking about the actual process of healing, and what part is the magic impacting, is magic good at all parts of healing? Like, using magic to lower someone's fever, that's great, but fever can be an important part of the healing process, right Freya, doesn't the fever burn out the virus? I don't know, I have kind of a medieval approach to medicine myself.

F: Yes, a fever is part of the body's response to illness. It doesn't mean that you can't take down a fever because then they won't get better, and we know that very high fevers just make people feel miserable and occasionally cause seizures in kids, but you have to think about it on a certain level, you're right, about what is the magic actually doing, and I developed a great amount of frustration with the *Harry Potter* world around healing and healers-

A: Tell us about that, Freya.

F: -when I started studying anatomy and I started studying medicine, and I wrote a fanfic about it because I was angry.

All: [chuckle]

A: What are your problems with *Harry Potter*?

F: It's nothing to do with something being particularly illogical, I think it's the same thing that pops up when you dig too deeply into any one corner of the *Harry Potter* worldbuilding, which is that if you try and dig down to a level that makes sense, you're not going to find anything because her approach to worldbuilding was as something comes up, we'll put in something that seems cool. And when you're writing books for kids that is fine, you do not have to explore every level of the magical system, but there is so much weird stuff like, "Oh, you're just gonna lie

here in a hospital bed while we give you a potion to make your bones regrow," and "We can kind of fix these things, but if you get cursed in this way, you just die and we can't fix it" and their whole systems of fixing everything are very magical, so it's like, do wizards get cancer? What do you do about cancer? Do you know what it is? Do you have a magical cure for it, and if so, how do you justify not giving it to muggles, it's just… ugh. Yeah, yeah. When you start digging, things get weird.

M: There's also a whole element in there of muggle medicine just confuses them, because there's the one plot point where Ron's dad who just loves everything muggles, he gets attacked by a thing, he's like, "Hey, muggles do this thing called stitches, we could just try that!" People are like, "Are you *crazy?!* What are you doing sewing up your skin, are you a madman, that's the silliest thing I've ever heard!"

F: But if you don't learn basic science at high school, which one does not at Hogwarts, how do you have a basic understanding of what anatomy is? They must have a magical model for how the body works and then they have healing magic that is consistent with that, but one assumes that witches and wizards have the same anatomy as us, so do they get different diseases? How do you function as a healer when you don't understand how the body works? Or if you do understand it on a completely different level, how does that interact with illnesses and injuries that non-magical people get?

M: They can magic away a broken bone, but they don't actually understand how a bone heals itself because they never really did that.

F: And if you don't understand how a bone heals itself, how do you build up a spell that does it, is my thing.

A: That's a good question!

F: Where does the magic come from!

A: Yeah, and the question you asked about do they have magical illnesses, I feel like she mentioned at some point magical measles or something like that that the wizard kids get.

M: Right.

F: And there's a lot of hexes.

A: Right, which, *why*, physiologically, aren't the muggle kids getting magical measles? What is the source of this, where does it come from, why do only magical kids get it? If you are a wizard born to muggle parents, are you at risk for magical measles?

F: Yeah, and at that point, you have to start saying are they technically, on a physiological level, a different race?

A: Yeah.

F: Like, a different species. If there's something about your biology that says you can make magic, is that same thing about your biology means you are susceptible to completely different diseases?

M: Do they have some separate magic-fielding organ that moves the energy through their body…

F: [laughs] It's the pineal gland, that's what it does!

A: [laughs] No, I was gonna say it's the golden core, Freya!

F: [laughing] Ah yes, the golden core.

M: But like, if you delve into the biology, then if it's mostly if your parents were wizards then so are you, there's squibs and there's whatever, I forget the term-

A: Clearly there's some Punnett square nonsense going on here-

F: Complete nonsense.

A: -about dominant and recessive genes.

M: *Yes*.

A: But…

F: But who knows. Who knows. That's why this book I wanna write with a magical medical school is me wanting to tease out how you would actually write a magical system and magical medical practitioners that coexist with non-magical medical practitioners and non-magical medicine. Like, in a society that has healers, why is all medicine not done by them, and who has access to them if there's only a small amount of them compared to people who are just trained in normal medicine, and how do people fit together magical and non-magical models of disease and illness. So that will be a whoooooole lot of worldbuilding fun that I get to dig into.

A: I also think it's interesting to do worldbuilding about where this sort of inherited knowledge comes from? Do you have established schools, is it more of an apprenticeship program, is it something that is still being developed - those are all questions to ask when you're doing your cultural worldbuilding. Because I think for most of history it has been more of an apprenticeship

kind of thing where you have a local healer or a midwife or something, and you are a small intelligent child who is interested in gross stuff, and you sort of just follow her around and learn at her elbow as she does all the things.

F: Or else you are a fourth son and your parents are looking for a respectable profession for you, and even if you have no professional interested in Medicine, capital M, being a city doctor is a respectable profession, and you're just going to be apprenticed to such-and-such and you're set up in life. And I think you're right, you have to think about what society thinks of medical practitioners and different types of medical practitioners, and how does that play into how they think about gender, and midwives and hedgewitches and herbalists, usually women, not getting much respect, and then you've got the men who stride around with their bags and their leeches and their saws are considered upstanding professional members of the community, but they're still tradesmen so they're still below a certain level of social status, and you can do a lot with how society thinks about the people that heal it, and that would again reflect how they think about disease.

A: Yes. Like whether they are tradesmen as you say, or whether they are the spiritual and magical practitioners as well, or religious figures, because in some cultures, probably in the *Babylon 5* example that Marshall gave, I would guess that because there's so much tied up with the spirit and the body of that alien race, I would guess that their medical practitioners are in some way going to be religious or spiritual practitioners as well, you know?

M: Right, I mean, they don't delve too much into anything else with that species, I don't think the species ever shows up again, but they come to the station to help their son because there is no other options for them anywhere.

A: And you can make inferences based on things.

M: Yeah.

A: But we're getting towards the end of the episode, so as is tradition, we are going to ask Freya to contribute some worldbuilding for us. It can be on theme or it can be completely random. Do you have something for us, Freya?

F: OK. Yes, it is gonna be on theme, and it's going to be a social ritual related to medical students.

A: OK. Love this.

F: So this is something that could happen all across a particular society if you like, or it could only be in a single city, but among all the medical students, the day after their final exams to be qualified as doctors or healers, they go out into the wider world wearing masks and basically it's a day where they play lots of harmless pranks, like they do flash mob dancing, or they make big

chalk murals in public squares, and it's meant to be a combined reminder that they are people as well, but also a purging of irresponsibility, like it's your last sort of gasp of being irresponsible in a public space before you become responsible for your fellow person.

M: Oooooh!

F: And I think it started out as that, but now I think it's an open secret that on that day, a lot of fully qualified doctors might sort of put some masks on and go out and join in, again as a reminder of that you're allowed to be fun and irresponsible sometimes, or your doctor might just wear a half mask with some ribbons on it or something as a gesture towards that on that particular day.

A: That's fun!

M: I love that *so much*.

A: That's really good! I have some questions. Is this something that is limited to only the doctors, or is this a wider festival day, sort of like a Feast of Fools or a topsy-turvy kind of day?

F: The people doing this stuff are meant to be just the medical students and the doctors. But if a group of masked people surges around to where you're dining out on a cafe or something, then you might get up and join in the dancing with them, but you're not allowed to wear the mask.

A: OK. OK, so it's gonna be more of a tradition that's rooted in the medical school itself, rather than in the broader cultures.

F: Yes.

A: OK, cool, cool, cool.

F: And it probably started in just a prank that one year of the medical school just decided that this was what they were gonna do, and then it got passed down to the next year of the medical school, and now it's become and accepted thing in the community where people quite like this idea of your doctor getting this day of fun Feast of Fools kind of thing before they become someone who is considered to be very socially responsible.

M: But I also love it in terms of how it fits in as a sort of later-life adulthood rite. Like, OK, you've done all this and now you're moving on to the next level, so here's your last gasp to do something absurdist and childish, so on that level I really like it a lot.

A: I have another question. Sorry, I have a lot of questions about this one. So since it's a last gasp kind of thing before you take responsibility, do they have a concept of the Hippocratic Oath? Like, the night before you graduate, you go out and you have fun and you do this thing,

the next day you take your responsibility - this must be a very formalized, serious thing they're taking on.

F: I think they may not have a specific oath, but I think it is embedded in the culture of medicine that it is a serious profession, that you have a serious responsibility towards your fellow people, yes, and I think that would have to fit in with a festival like that, it couldn't just be one where doctors look down on the rest of people or it's just considered that this is a job like any other job, I think it has to go hand-in-hand with a strong sense of responsibility attached to this profession. And because of that I think there would have to be a certain amount of privilege probably attached to the profession as well.

M: I was gonna say, maybe something where, because you are literally taking on the title of doctor, it means that you have a certain amount of responsibility not just in terms of the work you are doing, but how you go about it.

A: And the sort of person that you're presenting yourself to be in society.

M: Right.

F: Yes. The expectations of the way you behave.

M: If you are a doctor in this society, then if there is a sick person in front of you, you will help them, there's not a question or anything like that.

F: But also you would not be expected to be seen carousing and causing public drunken nonsense on a day-to-day basis.

A: Right, you would be sober and serious and yeah, yeah. That's all fascinating.

M: Because you might have to save a life at any moment.

F: Yeah.

A: At any moment!

F: True, that could actually be extended to certain substances being forbidden among that profession. The expectation that you might have to be sober and you could be called upon at any moment for your job, maybe you're not allowed to drink or ingest some other substance that is popular in that world, maybe that's this one day of the year where…

M: This is your last chance to get away with it.

F: Last chance to get away with it, and so probably there are some doctors out there who kind of miss it a little bit, and they might make sure their patients are covered by someone else, but that's why they might put the mask on and go out, do a little bit of drunken carousing on that one day a year.

A: Or I'm also thinking about a group of doctors getting together and having a designated driver. Like, "We're all gonna hang out, and four of us are gonna get drunk, and one of us is gonna stay sober just in case anyone in the area needs their life saved."

F: [laughs] I mean, my pub trivia team is mostly comprised of doctors and any given evening when we go out to pub trivia, about half the group will not be drinking because they'll be on night shifts, so they'll just be having water or having lemonade.

M: And those later life things, the mask could literally be a thing of "I am not a doctor right now, see, this is not my face".

A: Yeah, yeah. That's all very fascinating. Thank you so much, Freya, wonderful job!

M: I love it! I love it so much!

A: Thanks very much. Love it very much.

F: Well thank you for having me on, this was fun.

A: Thank you so much for being with us, it was wonderful.

[outro music plays]

A: Hi, you. Thanks for listening to this episode of Worldbuilding for Masochists and letting us help you overcomplicate your writing life. Our next episode goes up on April 15th and we'll be giving you a tasty five course meal of an episode discussing the worldbuilding of food. I can't wait, I'm hungry just thinking about it. We really hope you liked this episode. If you did, please do take a minute to tell a friend, shout about us on the internet, or leave a review on iTunes. If you've got questions or you just want to tell us how cute we are, there's a number of ways to contact us. We're on twitter and tumblr as @worldbuildcast, and our email is worldbuildcast@gmail.com. We also have a discord chatroom linked on the About the Show page of our website if you want to come chat with us and other fans of the podcast.

Here's your cool fact of the day: on the subject of the human body being incredibly resilient, the Russian cult leader/sorceror Rasputin was in a single evening poisoned, shot once, went on a mad rampage, fell into a snowbank, was shot three more times, beaten, and dumped in an icy river. While many accounts report that he crawled out and died of hypothermia, no, it was the bullets actually, sorry.

[outro music plays]