

Sawbones 389: Sex and Gender

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Clint: *Sawbones* is a show about medical history, and nothing the hosts say should be taken as medical advice or opinion. It's for fun. Can't you just have fun for an hour and not try to diagnose your mystery boil? We think you've earned it. Just sit back, relax, and enjoy a moment of distraction from that weird growth. You're worth it.

[theme music plays]

Justin: Hello everybody, and welcome to *Sawbones*: a marital tour of misguided medicine. [laughs] I'm your cohost, Justin McElroy.

Sydnee: And I'm Sydnee McElroy. What's with the— the congenial—

Justin: Just feel so tickled to be doing this show. You know, it is a... it's a delight to get to work with my wife and, uh, I'm just happy to be recording this podcast.

Sydnee: Well, me too, Justin.

Justin: Okay.

Sydnee: I'm excited this week.

Justin: Hm!

Sydnee: Um, lately, Justin, there's been a lot of discourse in the world, in the media, in the news, about sex and gender.

Justin: Hm.

Sydnee: And it occurred to me that we've never really done just, like, that as a topic on our show; talk about sex and gender and, like, from a— both a scientific and a historical perspective, what— how have these ideas either changed or maybe just our understanding of them, our knowledge of them has grown and evolved over time.

Um, and the reason I think it's so important is that I keep seeing this argument lately that while we may believe— and these are very much, like, western— a lot of this American sort of thinking. But also, like, it reflects a lot of western ideas about gender. That while maybe know we're open to the possibility that gender is not binary, that gender could be fluid, could be a spectrum, that you see these arguments that, like, "Well, but sex is not. Sex is binary. Sex is science. Sex is biology. Obviously we all know this."

And there are a lot of, um, false arguments that are predicated on that, that as an accepted truth.

Justin: That...

Sydnee: But it is not a truth.

Justin: Ah. Yeah.

Sydnee: It is wrong.

Justin: It seems like that's— a lot of people like to frame the discourse as feelings or emotion or identity or society, whatever, versus hard, cold science. And you, Sydnee, are here to rip science from their grasping hands.

Sydnee: [laughs] Well, I just think if you're going to—

Justin: Take it back to the home team, as it were.

Sydnee: If you're going to try to claim some— like, that some sort of, um, belief system basically, your own beliefs and biases, are based in science, you better be right. [laughs quietly]

Justin: You better be right, or Sydnee gonna come for you. Ask— ask the wellness community. Sydnee gonna come.

Sydnee: And if it's— and the thing is, like, if you— if this is wrong, and you're using it to, uh, oppress others and to deny the existence of people, then... you know, you need to be called out. And... educated.

Justin: And you just so happen to have a podcast.

Sydnee: Uh, so that— that's what— that's what I wanted to talk about today.

Justin: Let's do it.

Sydnee: Let's focus on sex first.

Justin: [through laughter] Yeah!

Sydnee: The idea of sex— no, like—

Justin: High five!

Sydnee: Not sex like...

Justin: Great success.

Sydnee: No. [sighs] Okay.

Justin: Great success.

Sydnee: I have had a lot of conversations with even other, like, scientists—

Justin: Oh. I forgot that when we're recording *Sawbones* my button— my special button that makes Borat say "My wife" doesn't work. So folks at home, this is the second time I've done it and Rachel has had to edit it out both times. So to save Rachel the indignity, just pretend you heard Borat saying "My wife." [sighs heavily] Okay, go ahead. Sorry.

Sydnee: Great. So, whether people are making their argument based on, like, chromosomes, or—

Justin: Wait, weather people are doing this?

Sydnee: No.

Justin: Because I—

Sydnee: Not—[laughs]

Justin: —have known a lot of different weather people that have not been the way you are describing.

Sydnee: Not meteorologists.

Justin: [through laughter] Okay, good.

Sydnee: Like... h-whether.

Justin: [through an exhale] H-whether—[laughs wheezily]

Sydnee: H-whether people! [laughs]

Justin: H-whether.

Sydnee: Are making this argument.

Justin: We have taken to pronouncing W-H words like that around the house to help our daughter—

Sydnee: H-whether.

Justin: [through laughter] It's— although, Sydnee, that's not even a W-H word, I'm just realizing!

Sydnee: Yeah it is.

Justin: H-whether?

Sydnee: Yeah. Like I'm saying whether or not—

Justin: I got you. Whether— got it.

Sydnee: Yeah. Not weather like the outside.

Justin: That helps with— that is— the pronunciation is very helpful in this case.

Sydnee: Yes. H-whether.

Justin: Yes.

Sydnee: Um, there are— I have had people in science tell me, like, "Well, there are two biological sexes, right?" And again, they're usually basing this argument on either chromosomes, XX versus XY, there's a, like, binary sexes.

Justin: Yes.

Sydnee: Or they're— it's a more sort of base argument on, like, "Well, you just... look in the... bathing suit area, and you can tell."

Justin: Yes.

Sydnee: And obviously I think it's easier for people to understand why that argument is unscientific and flawed. Um, but then they go back to the DNA, chromosome thing and think, like, "Well, but *this* is... this is truth. I was taught it in high school science.

Which many of us were, right?

Justin: Sure.

Sydnee: You were probably taught that at some point.

Justin: Yeah. I don't— I don't pay— I wasn't paying very close attention, but for sure, I'm sure I was taught that.

Sydnee: So let's talk about— let's start with chromosomes, 'cause there are many layers when it comes to, like, sexual development. Um, but let's start with, you know, the chromosomes.

Justin: Okay.

Sydnee: And to do that we have to kind of get embryonic. So we talk about, like, the immediate forming of the embryo, right? Like, the sperm and the egg come together.

Justin: Sperm meets egg, makes a zygote.

Sydnee: Yeah. So, um, we— and we really, by the way, our beginning of understanding this process, this specific, like, the genes and chromosomes and karyotypes and all this, really developed in, like, the mid-1900's. That's when we began to look at genes and chromosomes and start to understand, like, when we talk about sex and, like, the layers of sexual development and what equals what, that is where we started to figure this out. There was a lot of research done by a psychologist named Dr. John Money, and a pediatric endocrinologist named Dr. Claude Migeon.

Justin: Hmm!

Sydnee: And, uh, they did a lot of research on this back in, like, the 1950's. They actually had a, um— a gender-affirming clinic that they would run to do, like, you know, procedures and things for— in this pursuit. So, you know, this is when you start to see, like, the scientific understanding of this, um, specific area of genetic research. Uh, the traditional understanding was that XX means girl, XY means boy. This is a very sort of rudimentary kind of explanation that people would give you.

Justin: Right.

Sydnee: Um, and again, I'm not saying that is accurate, that it was the understanding. Uh, and if we wanted to know a definitive answer, you could do what's called a karyotype, where you just— and you've probably seen pictures of this. It's all the pairs of chromosomes laid out?

Justin: Mm-hmm.

Sydnee: In a little photograph?

Justin: Mm-hmm, yeah.

Sydnee: And then you look at the last pair. Is it XX or XY? Do they look the same or do they look different? And then that's it.

Um, if this were done on all of us, if this exact procedure, if we all had a karyotype done— which you may have. I haven't, but some people have. You may actually be surprised as to what you would find, because there aren't only two choices. There aren't just XX and XY individuals. There are other combinations that can and do happen, some of which you know about, because they present in a physical form, right? Like, in a clinical presentation, in that person. And others which you may never know, because as chromosomes are dividing, as cells are dividing, as genes are being exchanged between chromosomes, as all this is happening, there's always room for variation. That's why we all look different, right?

Justin: Mm-hmm.

Sydnee: 'Cause of all the variation that can occur during that process. So, sometimes the chromosomes aren't distributed equally, and you get something like XXY, or X... O, meaning X alone, or you get XXX. Um, sometimes you can have transfers of genetic material between what we have commonly called the sex chromosomes, the X and Y chromosomes, right?

So there's a part of the Y chromosome called SRY region, and this is responsible for a lot of the secondary sexual characteristics. If that gets transferred to an X chromosome... then all of a sudden, the X chromosome has those same properties.

Justin: Well... well, Syd—

Sydnee: That we would associate with a Y chromosome. Um, and these things aren't just— a lot of times when you start to talk about this, even people who have heard this sort of science before will say "Well, but, like, this never ha— I mean, like, this is so rare, right? Like, this is so incredibly rare."

Justin: Yeah.

Sydnee: Well... somebody who has XXX, three X chromosomes...

Justin: I— okay?

Sydnee: Or XYY, those are both about 1 in 1000 live births.

Justin: I wa— I thought you were about to say somebody who has XXX on DVD. And it's like, I love that flick. I didn't realize [crosstalk]—

Sydnee: Do you have XXX on DVD?

Justin: Uh, no. I— you don't allow me to collect physical media anymore, so.

Sydnee: [laughs quietly] No. We had too much. The, uh— do you— XXY, which is the most common of these, is actually 1 in 600 live births.

Justin: That's more.

Sydnee: Yes. My— my point is—

Justin: Did that math in my head. [snorts quietly]

Sydnee: —these aren't quite as rare as you think they are.

Justin: Right.

Sydnee: Um, and again, not everyone always realizes either immediately, in puberty, or ever, that this might be true, because you don't generally get to see your chromosomes. [laughs quietly]

Justin: No, that would be wild.

Sydnee: There are also other—

Justin: Although I guess maybe Inside-Out Boy, maybe when he went over the bar on the swings? Maybe he saw his chromosomes?

Sydnee: No. You still— they're too little.

Justin: Aw.

Sydnee: You still can't see 'em. Um, there's also other things that can happen that are, again, more rare than these conditions. But there's, like, mosaicism, when there are different sets of chromosomes in different body cells. So, depending on which cell from your body I sampled, I might see a different makeup there at the end.

Justin: Oh, okay.

Sydnee: Um, there's also something called chimerism, and we've talked about these before on the show, where in utero two fertilized eggs will fuse and form, like, you know, one embryo, one— one eventual person. So within that person are basically two different sets of chromosomes.

Justin: Whoa.

Sydnee: So again—

Justin: That's some cool—

Sydnee: —you could get completely different karyotypes based on which— you get what I'm saying?

Justin: Yeah, that's awesome.

Sydnee: And, I mean, those things happen. There's also, like, the exchange— we've talked about this before on the show too, I think— between a pregnant person and the fetus that happens where, like, some of the fetal cells get into the pregnant person's body, and some of their cells get— and they— like, you can still find them later on.

Justin: Hm.

Sydnee: So again, you can find XX, XY, XXY, XYY, all these different combos in people, and that's— that just happens. That's just nature. That's just there. That's not how anyone feels. That is science.

Justin: You can find Combos in me, too. [holding back laughter] Especially if I'm on a road trip or something.

Sydnee: [laughs quietly]

Justin: And I get a little peckish. I'm sorry, Sydnee! I have to find— this is— I'm— I'm kind of out of my lane here, so I'm trying to find my great jokes where I can.

Sydnee: I gotcha, I gotcha. And these are— these are—

Justin: Pepperoni Pizza Pretzel, thank you for asking, listener. That's my brand. [wheezes]

Sydnee: This is just the first layer, by the way. Even after you've got, like, the chromosomes sort of established, there's also, like, the development of the reproductive organs, what we usually refer to as the gonads. So, like, ovaries or testes.

Justin: [sighs] That's a really— that's a *really* funny wor— I don't wanna derail—

Sydnee: I know. I know.

Justin: But it's a *really* funny word. Dang it!

Sydnee: And this involves a lot more than just the chromosomes, because you can get individuals who are XY who don't develop testes, and vice versa. And, I mean, so this is not a one-to-one thing. There is this belief that XY equals testicles equals man, and, you know, vice versa for XX. And this— none of this is true. There are 25 different genes that work

together to create the physical characteristics that we associate with sex, and any of those can change the course of things and create a variation.

So again, all of these are ways that sex can exist on a spectrum. And a lot of this is classified— you may have heard the term "intersex" before.

Justin: Yeah.

Sydnee: There's also "differences in sexual development," or DSDs.

Justin: Okay. Is there a preferred term?

Sydnee: I think it depends. I have heard that scientifically a lot of, like, researchers have adopted the term DSDs, but I have also heard from some intersex individual activist organizations that they prefer intersex, but I think it would be an individual person. Like, I think you'd have to ask a person what they would prefer.

There— and there are a lot of these that can come into play, depending on, like, hormones and receptors. Um, there— and there are cases, again, that you don't always know that this variation might occur. There was, like, a 70-year-old father who, back in 2014, presented with— he was a father of four, 70 years old, presents with a hernia, and it ends up being there's a uterus and a Fallopian tube in there.

Justin: Wow.

Sydnee: So testes or ovaries can develop, but this does not necessarily align with any sort of, you know, definite chromosomal array. Also, the external genitalia that develops next, that doesn't necessarily align with anything either. 'Cause again, there are all kinds of hormonal differences and receptor differences that can effect what develops, what you see, basically, when a baby is born. What you can look and visualize there.

All of that is not necessarily tied to anything on a genetic level. Um, and again, there's even further variation when we get to, like, puberty. Um, you can see changes at that point, and variety that doesn't, again, line up with what you had assumed previously.

Plus, there's also this idea of brain sex. What your brain, what sex your brain is.

Justin: Hm.

Sydnee: Um, and again, this is not something that— I feel like there are a lot of people who try to write this all off as, like, just something you believe. But there are also scientific, like, studies, there are scientific differences when we look at the structure and function of the brain when

it comes to— for instance there was a study that was done in people who are transgender, and they basically said, if I look at the brain after looking at structure and function, the brain of a transgender woman structurally and functionally is more similar to a cisgender woman than a cisgender man.

Justin: Wow.

Sydnee: Does that make sense?

Justin: Yeah, absolutely.

Sydnee: And vice versa. And they've done these studies and proved them time and again. So, like, brain sex is a thing. There are real, observable differences, which isn't the end-all-be-all, but they are there. So if you're gonna use science for your argument, you better make sure it's in your favor, and it's not.

The science says sex is a spectrum, just like gender is a spectrum. And these things— all these things I'm talking about, again, just to give you an idea as to, like, not-rare this is, so when it comes to intersex or differences in sexual development individuals, there used to be this argument that, like, this occurs in, like, .05, .06% of the population. This is, like, negligible. We don't even need to thi— which even if it was...

Justin: Hey, yeah, even if it was, we should probably try to think about everybody. [wheezes] If possible.

Sydnee: Exactly. But if you want to start talking about how sex is a binary and all of this proves that that's untrue, then you need to consider every case where XX chromosomes do not, you know, default equal girl, and XY boy.

Um, and in that case, it's probably about 1.7% of the population.

Justin: That sounds like a lot to me.

Sydnee: Yeah, it's, like, 130 million people.

Justin: Yeah.

Sydnee: Right? That's a lot of people. To put it in perspective, that's about the same percentage of the population that has green eyes. It's about the same percentage of the population that has red hair! And we don't consider either of those things so rare that you'll never see them or know anybody with them in your life.

Justin: That's true.

Sydnee: So these— you know, this—

Justin: But we do have our own biases against them.

Sydnee: [laughs quietly]

Justin: If I could— if I may be so bold, and maybe that's something we could all reevaluate too.

Sydnee: So, in a lot of the recent, like— and what brought this to mind for me personally is, um, in our state of West Virginia there was this horrific piece of legislation passed to ban transgender athletes from playing sports in high school, and college, actually. Well, all levels of schooling. That, um— that our, like— with the group that is congruent with their own gender identity, right? And a lot of this was based on the idea that we could either do an external genital examination, or we could do a chromosomal test and prove what their quote, unquote, "biological sex" - this is how it was always worded - is. And that that's just science.

But that's not true. None of that is true, because there isn't a binary, and you couldn't do either of those things and definitively prove anything, because if you wanna ask, "How can you scientifically determine sex?" The answer is, you can't, if you're using sex as a binary. You can't, 'cause it's not a binary, because it's a spectrum.

So the whole argument falls apart at that point. And then further, like, what is your motivation for even doing that? Well, it's always to do harm. It's always to oppress and discriminate and—

Justin: Yeah. Right.

Sydnee: —deny someone of their, you know, natural human rights. So there's no reason to do it. But beyond that, scientifically, it just doesn't stand.

Justin: Well, that should— wraps it up. I guess we've solved another one, Syd.

Sydnee: Well... that's not the whole story, though.

Justin: Yeah.

Sydnee: Because sex is not a binary.

Justin: Okay.

Sydnee: We have determined that. Gender is not a binary either, and while we here in the west may have only recently begun to say that out loud and acknowledge it, there are a lot of people all over the world who have known that for a long time.

Justin: Mm-hmm.

Sydnee: And I wanna talk about that. But first, let's go to the billing department.

Justin: Let's go!

[ad break]

Justin: [to the tune of "*Where in the World is Carmen Sandiego*"] Where in the world is gender non-binary?

Sydnee: Well, Justin, that, I think, again, there—

Justin: [continues singing] Where could it be?

Sydnee: When it comes to gender, um, the difference is— and I think you probably already understand that— if somebody talks about sex versus gender, what is gender?

Justin: [inhales] Don't you... dare...

Sydnee: [laughs]

Justin: ... [holding back laughter] don't you dare force me to answer a question. Here on this episode, I'm a listener, Sydnee. Not an answerer. How dare you! I shan't.

Sydnee: So—[laughs]

Justin: I shan't fall for your— your rotten tricks.

Sydnee: Gender has to do with— it's much more of a construct, right? It's much more socially dictated. It depends on—

Justin: It's boys and girls in the—

Sydnee: No it's not—

Justin: —in the sense that we— that we have understood it as a soci— that's the labels that people want to put on it.

Sydnee: In the past, yes.

Justin: Yeah, that's what I'm saying. Like, the— the old—

Sydnee: [simultaneously] But it— but it has connotations.

Justin: —ancient idea of, like— not ancient, but, like, our connotation of quote, unquote, "boys and girls," in America.

Sydnee: And everybody else.

Justin: And everybody else.

Sydnee: Yes.

Justin: Yes.

Sydnee: So, gender has to do with, like, everything around us in our time and place in history.

Justin: This is what I'm saying. I'm not saying literal.

Sydnee: Yes. It's not just—

Justin: I'm saying, like, the understa— the connotations that we have put on it as a society.

Sydnee: Yes.

Justin: Yes.

Sydnee: Exactly. So gender is more complicated, and it's changed over time. Like, what we associate with different genders. What colors or clothing or activities or jobs, or whatever. What our roles are. All those things can be— can change depending on where you are and when you are, and which culture you're within. Again, in our— in the western view, gender was considered a binary that was sort of linked with that binary sex for a while, right? Like, sex was boy, girl, man, woman. Gender is the same thing, or has been. I mean, I'm not saying— again, I— this is not true, but this is— this was the perception. Gender is also man, woman, and it is linked with those sex definitions, and that's that.

Um, and when you start to go to, like, what do you associate with each one, traditionally in the west we've had this masculine view of what a man, who is XY, would be, and this feminine view of what a woman, who is XX, would be.

Justin: Right.

Sydnee: As if that is the all-knowing truth, and that's the end of it.

Justin: On the man's side you got a kind of... I don't know how to say— like, a Justin McElroy type, who's sort of, like, the classic machismo man—

Sydnee: [laughs]

Justin: —as we've understood in American culture.

Sydnee: Right.

Justin: You're sort of like a Justin McElroy-type, you know what I mean? That's on, like, one end of it.

Sydnee: Yeah.

Justin: In the classic— in the classic mold. Obviously these definitions have developed over time. But if you're talking about in the classic style—

Sydnee: Right, and if—

Justin: —machismo... that kind of thing, it's kind of like a Justin McElroy.

Sydnee: And if you're looking for your classic feminine, demure... you know, deferential—

Justin: Wilting violet. [wheeze-laughs]

Sydnee: Right. [laughs] Fainting flower.

Justin: Yeah.

Sydnee: That's me! All over. That's—

Justin: That's a Sydnee McElroy-type.

Sydnee: Uh, absolutely.

Justin: You've got kind of the classic— the classic archetypes represented here on this podcast.

Sydnee: Right.

Justin: Which is very helpful. 'Cause it give you a place to start from, don't it?

Sydnee: So the thing is, while we may— and again, especially in... I mean, let's just be honest, especially in the US, we have this view that, like, "Well, this is the way we believed it, so obviously everyone else believed the same thing, and... "

Justin: Yes.

Sydnee: "... this is the way it is."

Justin: American exceptionalism I believe is the—

Sydnee: Right.

Justin: —the jingoism.

Sydnee: This is— this could not be farther from the truth. There are lots of cultures throughout time and place that have never viewed gender as a binary. And because they— you know, because gender was something that was much larger, more fluid, and a much bigger spectrum than what we view it here in the west, it reflects that innate understanding that sex is not binary, either. Right? Because we're talking about cultures that understood these things long before we could do a chromosomal array, right? Um, if you look to Native American people, like, in the United States, you can find, like, among the Zuni and the Navajo people, the idea of two-spirit individuals being very common. Specifically in the Navajo tradition there can be four genders.

Justin: Hmm.

Sydnee: There's, like, a masculine masculine, masculine feminine, feminine masculine, feminine feminine. And, um, each of those has its own sort of, you know, again, because that's what we do with gender, we have, like, things we— connotations we make, roles that person plays in society, things they look like, and do, and act, and be.

And each of those has their own, and that's just— that's part of that culture, and always has been. That no, there aren't two genders. That would never have been— that's not the framework. That's not the structure.

If we look as far back as *The Kama Sutra*...

Justin: Nice.

Sydnee: You remember *The Kama Sutra*?

Justin: Oh yeah, I do!

Sydnee: [laughs quietly]

Justin: Used to watch several specials on Showtime devoted to, uh, understanding that particular tome, so... very— very well-educated there.

Sydnee: Uh, which was written between 400 and 300 BCE. Uh, there is recognition of other genders in India that far back. So again, these are not new concepts. These are ancient concepts.

And, uh, specifically in India these individuals were thought to possess, like, a mystical almost ability, extra abilities. Especially in, like, the realm of song and dance and, you know, these beautiful sort of, um, magical energies that these individuals had, um, that fit into this third gender.

Justin: Mm-hmm.

Sydnee: And actually in 2014, the Supreme Court in India officially recognized a third gender. I mean, you know, there wasn't just male, female. There was a third gender, um, that we would probably in our terminology refer to as— in the west, as transgender. Um, they use the term hijra or kinnar as their preference, which is actually a reference to a mystical creature in India.

But anyway, they are one of several countries, now, who have a third gender option. Um, and now that has also been added with more, um, in even western countries, recognizing transgender individuals and gender non-conforming individuals, and non-binary individuals, and everybody who didn't fit into that sort of false framework of boy girl. There are lots of countries who have followed suit now, but even earlier, this concept of a third gender that is ancient, that is not new, that is not the result of, you know, whatever— whatever transphobic activists wanna say it is—

Justin: Right.

Sydnee: These are ideas that have existed long before the United States of America existed. And again, if we continue to look outside of our sort of cultural lens, among the First Nations people in Australia you find sistergirls and brotherboys, and among the indigenous communities there, gender has always been fluid, and more than a binary, and something that was defined by asking someone, or them telling you, and then accept that, 'cause they know that, and that's the end of the conversation. And no examination or, you know, blood test is necessary to prove anything further.

And even when we try to use, like, our terminology, like, to define those, brother boy, sister girl, what does that mean? Our terminology isn't even— like, the language we would use in the west is not enough for that. We can't encompass all of the, like, cultural connotations of that, and

what those words mean. We could try to say, like, well, that's sort of— that is the same as what we would call a transgender woman or whatever. But no, it's more than that, because it's— because their concept of gender is different than what we have here in the US, and assume is scientifically grounded. Because it's all just a cultural thing.

Justin: Yeah.

Sydnee: In Hawaiian indigenous cultures, we have the māhū, who again, defy this gender binary. In Samoa they have the fa'afafine people. In Madagascar, the Sekrata. In the Oaxaca state of Mexico, the muxes.

There are lots of different gender categories outside of male female that exist all over the world, all throughout time, all across cultures, that just— and again, these aren't new ideas— that have just always been. Gender is not binary. Sex is not binary. There are not two things.

So why do we hold so tightly in the US to this false idea that this framework we have, this sex binary, this gender binary, is all correct...

Justin: [sighs heavily] Oh, man.

Sydnee: ... and that even though in many ways, like, we're in the minority for believing it, that we should impose this idea on our own people, let alone people who live outside the US.

Justin: Oh, man. I've been doing *Sawbones* long enough to— to s— to f— know when I'm about to have to start apologizing on behalf of my gender and, um, race, and so I am just gonna strap in and get ready, 'cause it's probably my fault, right?

Sydnee: I mean, do— are we using you—

Justin: The colloquial—

Sydnee: —as a representation—

Justin: [through laughter] The colloquial— the— the historical "you," I guess.

Sydnee: [laughs quietly] For why heterosexual, cisgender men...

Justin: Mm-hmm.

Sydnee: Yeah, it's your fault.

Justin: Yeah. That's about right.

Sydnee: So, basically if you wanna trace, like, the roots of— especially in these other cultures— 'cause, like, to say that in all these other places that I just listed that people who are not— who do not fit into some sort of binary gender framework are all completely accepted and celebrated in their communities and given all the same equal rights and, you know—

Justin: Yeah, no, no. I can't imagine.

Sydnee: —recognition. No. That's not true, and it's still a struggle for people who live all over the world, you know, depending on what culture they were raised in, if they don't fit in to this false gender binary.

Um, why did that change? It's— so it probably dates back to— first of all, when you go into, like, the Renaissance era, there's this idea of, like, class hierarchy that start to become very ingrained, right? The idea of, like, social strata. There are the elite people, there's royalty, there are rich people, there are well-educated people, and then you go, you know, kind of down the ladder below that. And along with this idea of, like, a class hierarchy, and the aristocracy and everything, and then the working classes below that, you start to get a hierarchy of other things that comes with it.

So, this is the ruling class, and along with the ruling class comes the ruling gender. And that ruling gender is masculine. And masculine becomes associated with man, becomes associated eventually, we would say, with XY, although we're not at that point yet.

So masculine men get placed at the top of this newly-developed... class, and then gender hierarchy. Feminine, eventually women, as it becomes the binary, are placed below them.

So first you have this, like, hierarchy of gender roles that begins to develop, and with that comes all their roles and responsibilities in society, and flip side, what they're not allowed to do.

Justin: Right.

Sydnee: Because as soon as you define who's in charge, everyone else is defined in relationship to them, and what they can't do or, you know, or are limited from because they're not that thing in charge. And the thing that was in charge was a white, masculine man.

Because just alongside this gender hierarchy that's being developed, as you start traveling all over the world, these western— these European cultures start traveling all over the world, they also start developing their racial hierarchy, right? This is the same time where we start to see whiteness placed at the top, masculinity placed at the top, people who own land, who have money, placed at the top, all of that becomes, like,

the center, and everybody else just has to try to orbit around it as best they can.

And as you get into, like, the revolutionary period, like, the 17 and 1800's—

Justin: [simultaneously] Not my last sorry, but—

Sydnee: —[laughs quietly] you start to see, like—

Justin: [simultaneously] I want to make a down payment on sorries.

Sydnee: —the American Revolution, the French Revolution, you— again, you're talking about, like, a time where we're, like, supposed to be celebrating the rights of man, standing up for the rights of man. Man supposedly is this stand-in for humanity, but it's not really, right? Because as laws begin to be codified in the US, who's at the top? Who's allowed to vote? Who's allowed to own property? Who's allowed to make all the decisions, over and over?

And so you have to, if that person who has that power is going to maintain and be in charge by virtue of their gender, you've got to very clearly define what is that gender and what isn't.

And so then we get these sort of ideas of men who are masculine being the sex and the gender binary, and women who are feminine, you know, on the other side.

And then we take that framework and we force it upon every country that we colonize all over the world. Not just the US— not the US alone, of course, but all of the other colonizing nations. That's what they did. They took this idea of a binary and every country they went to that had another idea, that had more fluid ideas, more of a spectrum idea of gender, every country they went to they said, "That's wrong," or it's primitive, or it's gross, or it's immoral, or it's not Christian, whatever. Whatever they wanted to do to say it was bad, to demonize it, and started to impose this idea, along with all the other things colonization brought, of gender as a binary.

Justin: Mm-hmm.

Sydnee: Um, which is why you see that sort of, like, struggle to get back to where they were in the beginning in some of these societies. Like, people who are outside the gender binary trying to fight back to a time where, like, you know, hundreds of years ago where that was normal and accepted, and everyone knew that there were more than two genders, because that's the truth. And now they're trying to get back to that because of what the colonizers did.

But I think it's really important when you look at sex and gender to understand that we get this really limited perspective. Like, "Well, we know what the truth is."

And that is so arrogant and wrong, because one, it's not the truth. You know, sex is not a binary, gender is not a binary. And two, other cultures, other societies, other countries, have known this for, you know, thousands of years. And just because it took us this long in the US to figure this stuff out or to listen to people who've been telling us this for a long time, doesn't mean that we just— gosh. That's us all over, right? "We just discovered it!" [laughs]

Justin: Yeah. We figured it— yeah.

Sydnee: "We discovered it today. We'll name a day after it."

Justin: Plant our metaphorical flag.

Sydnee: Right, no. But, like, this has always been true. And, I mean, that's great that we finally figured it out, I guess. Um, but that doesn't— but that doesn't negate the fact that there are a lot of other places where this has been known for a long time, and it is the truth.

You know, when you start talking about, like, in a lot of these cases, what scientifically could we do to figure out somebody's sex, again, there aren't two sexes, so there— and there is no reason to do this. It's not something that, you know, we should be doing, that we can be doing, that has value, other than to use as a tool of oppression.

And what we do know, what science does tell us, on the contrary, is that validating someone's gender, validating who they are, and offering them appropriate support, using correct pronouns, offering people who seek out gender affirming treatments or surgeries, making sure that they have access to those things, um, that, science tells us, is often life-saving. It reduces the rates of anxiety and depression and self-harm. Those are things that science can tell us, that validating someone's gender experience is the right thing to do, not just scientifically, although that's always nice, too, but, you know, ethically.

Now, Justin, as I said in the beginning of this episode, the impetus for this concept, this topic, is that I heard so many people making the argument that sex is binary, and using science as a reason for discrimination and for denying people's fundamental existence, right?

Justin: Yes.

Sydnee: And so that's why I felt like it was important to address that no, actually, scientifically that's wrong, and sex isn't binary.

But regardless of all that, honestly the only way to really, you know, know someone's gender identity, it has nothing to do with all this, the chromosomes, and the genes, or genitals, or any of the things we've talked about. The best way to do that is to ask someone. And then whatever someone says is valid and true, because you don't have to have any sort of proof to justify your identity. It is what you say it is, and that's it at the end of the day.

So I think it's important to remember that while it's useful to know this science, because so many people are using it wrong, to discriminate against others, at the end of the day, the science isn't the point. Treating people with respect and dignity, and validating their existence, is what really matters.

So there aren't two sexes. Go tell your high school science teacher that they were wrong!

Justin: Yeah, go push 'em into a dumpster and say "Hey, idiot."

Sydnee: Don't do that.

Justin: "Hey, tough guy. Remember when you used to push me into a dumpster? Well, now I'm pushing *you* in the dumpster, Mr. Wilson!"

[pause]

Sydnee: Well, I— please don't— please don't—

Justin: [simultaneously] He knows what he— he knows what he did.

Sydnee: I had— I had some— I had some great—

Justin: [simultaneously] He knows what he did.

Sydnee: I had some great science teachers. [laughs quietly] But the thing is, like... and I've said this to my colleagues, who I believe, you know, have a lot of knowledge in the scientific world, we were all taught a lot of stuff that was wrong. [laughs]

Justin: [laughs]

Sydnee: Um, but, like, if we have, you know, open hearts and open minds, then we can learn that we were wrong, and not that this is new information that changed.

Justin: Yeah. You were just wrong.

Sydnee: We were just wrong. And, like, if you're not sure in science if we can be wrong, I mean, listen to our podcast.

Justin: Yeah, we're wrong a lot.

Sydnee: We're wrong a lot.

Justin: Not about this, though. This one I feel pretty good about.

Sydnee: No.

Justin: This one I feel like— no, we're on the right track here. Thank you so much for listening to our podcast. Hope you've enjoyed yourself.

Um, we got a book, *The Sawbones Book*. If you want that, you can find it wherever fine books are sold, uh, or even bad books. Like, any book— like, any— pretty much any bookstore. Not a Christian bookstore, probably. That would be a pretty progressive Christian bookstore.

Anyway, you know, books. It's called *The Sawbones Book*. Uh, there's a paperback version that has some stuff about quarantine and what-have-you. It's pretty neat, and I think you would, uh— you should get it.

We got some other stuff there. We've got a fun horseshoe crab t-shirt and some other things, uh, at mcelroymerch.com, so head on over there and check it totally out.

Thanks also to The Taxpayers for the use of their song, "Medicines," as the intro and outro of our program. And thanks to you, for listening. We really appreciate it.

That is gonna do it for us, uh, so until next time, my name is Justin McElroy.

Sydnee: I'm Sydnee McElroy.

Justin: And, as always, don't drill a hole in your head!

[theme music plays]

[chord]

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