

Sawbones 331: Amnesia

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Intro (Clint McElroy): 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: Hey everybody, welcome to Sawbones: a marital tour of misguided medicine. I'm your cohost, Justin McElroy.

Sydnee: And I'm Sydnee McElroy.

Justin: And folks, it's finally here. It's Max Fun Drive time. I don't know if you know this, but we are part of a listener-supported network called Maximum Fun. We talk about it every week, so.

Sydnee: That's right. And when you are a member of our Maximum Fun family, you can directly affect how we make our shows.

Justin: Yeah, your support allows us to do this for a living. It allows us to put a lot of work into them, and allows Sydnee the time to research these episodes, and audio equipment, and the whole bit. So, we really rely on your support.

It's been a weird year, we know, and some people may not be in a position to. We totally get it. But if you can, go to MaximumFun.org/Join and support the work that we're doing and the other Max Fun shows we're doing. It would really mean the world. Your donation directly supports us and when you fill out your donation, if you've ever joined before, you list the shows that you listen to. So, you are directly supporting us.

Sydnee: And there are gifts if you are joining or upgrading, and we're gonna tell you about those. Not yet.

Justin: Not yet, but one I will tell you about, if you can pledge \$5 a month you get access to an absolute treasure trove of new content. Bonus content. Boco, in the parlance of Max Fun.

Sydnee: Justin, what are we doing this year for our bonus content?

Justin: Oh my gosh. Well, we already did one bonus episode that has been there for existing members. I forget what that bonus episode is, because we recorded it in March.

Sydnee: Is that right?

Justin: Yeah. But the more exciting thing for us is, and this is, we're exclusively revealing this information. Sydnee and I are launching a secret, Max Fun donor-only podcast wherein Sydnee and I watch and simultaneously review all of the Fast and the Furious movies. It's called Justin and Sydnee— no, Fast and Furious and Justin and Sydnee.

Sydnee: Yes. Justin's favorite part is the name of the podcast.

Justin: The name is very good, if I do say so myself.

Sydnee: It's not a, it's not like, um, a track. It's not a listen-along track.

Justin: No, it's not a commentary track.

Sydnee: Thank you. I couldn't— [laughs]

Justin: It's very stream of consciousness, and that consciousness is diluted by alcohol. There is, just a warning, a little bit of swearing, because the films have swearing so we figured that was fair.

Sydnee: Light swearing. And we tried to limit it to just the best bits, but I would suggest you see the movies or else they're gonna seem... very wild.

Justin: Very wild. Or don't see the movies, it's up to you.

Sydnee: Well, that's true. I guess, you know, whatever kind of experience you're looking for.

Justin: We're gonna be getting that link up in the next few days in the Max Fun donor bonus page, so check that out. But Sydnee, this actually, this new series led you to this week's topic.

Sydnee: That's right. We were watching the Fast and Furious movies and I don't wanna spoil anything in case you haven't seen them yet.

Justin: Impossible, but...

Sydnee: [laughs]

Justin: The only way you could spoil them is if you took out all the car stunts. That would spoil it.

Sydnee: If you took out all the car stunts the movies would be three minutes long each.

Justin: Yeah.

Sydnee: There is an amnesia plotline in one of the films, we'll just say that.

Justin: Yes.

Sydnee: And personally, I never really like amnesia plotlines in movies and TV. In part because, and we'll talk about this, there's some fairly common, like, unrealistic kind of myths that are reinforced, usually. And also, I just, I find that they're a way of saying, like, "We don't really know how to deal with complicated emotions for this character because of the situations that they might feel different ways about things, so we're just gonna make them forget everything in the past so they can be somebody else now."

Justin: Yeah.

Sydnee: "So that we can use them in a different way." And that always frustrates me.

Justin: Yeah. But, so, today we're gonna be talking about the reality of amnesia, versus the Hollywood illusions.

Sydnee: [laughs] In movies, amnesia tends to be triggered, like, at a convenient moment, and it is very selective as to what the character can and can't remember, right?

Justin: Right.

Sydnee: Like, for instance, just a random example off the top of my head, maybe the character can remember all of their, like, fast, stunt-driving car skills, but has absolutely no memory of where they're from, or another human that's known them literally their entire life.

Justin: Or their extended family.

Sydnee: Yes.

Justin: Because this series is about family. Fast and Furious franchise is about family. Fast and Furious and Family. And Justin and Sydnee.

Sydnee: [laughs] And then the way it's resolved is always—

Justin: You always get bonked in the head again.

Sydnee: Right.

Justin: Almost always.

Sydnee: And we're gonna get into that.

Justin: You either get bonked on the head again, or someone loves you so deeply [laughs] that you remember.

Sydnee: That you remember them, yeah. That all of a sudden, you're looking at them and—

Justin: I will be fascinated to hear how many times that has happened.

Sydnee: [laughs] So, the term amnesia traces back to the Greek for forgetfulness, or oblivion. There is a river of oblivion in Greek mythology.

Justin: It's called 2020.

Sydnee: Amnesty, intentional overlooking, this is all— the word amnesia comes from all these things. In the ancient writings from, like, Galen and Hippocrates, when we talk about amnesia it's usually in the context of another disease. So, it's not, like, amnesia as a disease in and of itself. They're really talking about memory loss associated with something that happened. This person has this condition, and one feature of it is that they've lost some memory. But they're not usually talking about, like, just amnesia as a distinct entity. Somebody came in and forgot who they

were. So, they'll talk about the stroke, or the illness, or whatever, and that's it.

It really wasn't until the 18th century where you get amnesia as its own thing to start to be, like, investigated and broken down and classified as to why it might happen and that kinda thing, with a physician and botanist from the 18th century named Boissier de Sauvages who— his main interest was, like, taxonomy, almost, or nosology. So he wanted to, like, classify diseases. He wrote a big book breaking down— he was a botanist too— breaking down diseases the same way we kind of break down plants, right? Kingdom, phylum, class, like, genus, species. He wanted to, like, take diseases and create those same, kind of, trees out of them.

Justin: For plants.

Sydnee: Like we do with plants.

Justin: You know, it's weird. I feel like you have a lot more multi-disciplinary people in these time periods. When we only knew a little bit about stuff, it seemed like it was easy to earn all of the little bit about a lot of different things.

Sydnee: Yes. Yeah, it's really interesting. I feel like, on a slight diversion, especially for physicians there was this period of time where they were so closely tied to the natural world and then to the humanities and to, like, all the different kind of academic disciplines that you were expected to pursue. There was a good time, I mean, even though we didn't know anything, it was a good time for physicians. And then as it got more its own science, like, it's a distinct science that you had to pursue without, while ignoring everything else, it's been, in my personal opinion, it's not been as great for medicine.

Justin: Yeah.

Sydnee: We need to get back to that broader view.

Justin: Yeah, a wide, a wide lens.

Sydnee: Cause we know more now, also, though. Like, we could do so much more than they could do then, which is just, "I dunno, here's some amnesia. Maybe bleed them?"

Justin: "It's all we got."

Sydnee: So, he broke it down into, like, why does amnesia happen. And he had all these different reasons. One could be venereal amnesia.

Justin: Venereal... I know there's venereal disease, and it's an STD.

Sydnee: Right, so this was probably syphilis.

Justin: Syphilis, okay.

Sydnee: It is probably what he was, without saying—

Justin: You got syphilis so bad you get amnesia.

Sydnee: Yeah. Well, I mean, tertiary syphilis, long-standing, chronic, untreated syphilis can cause brain damage and certainly amnesia, memory loss, could be part of that. Right? That's really what he's talking about.

Justin: That would be bad, too, because it's like, "I don't remember how I got this, so I'm not gonna change anything about my lifestyle."

Sydnee: [laughs]

Justin: And then every single time you get the amnesia again and then you get syphilis again.

Sydnee: Well, no, but remember, it's like that episode of House where the older lady, they find out, has syphilis and it's made her have the libido of youth. And so she keeps hitting on House and she doesn't want to get treated for syphilis because she wants to keep her sex drive?

Justin: No, I don't remember that exact episode of House, Sydnee, but I will take it for granted that that's not your fanfiction that you've written. That that's a real episode of the TV show House. They made a lot of them, so statistically speaking that probably is an episode of House.

Sydnee: [laughs] I've never written fanfiction about Hugh Laurie, but I'm not saying I wouldn't.

Justin: Fair.

Sydnee: There was also senile, which makes sense, memory loss associated with age. Traumatic, like you hit your head. Plethoric, which, at that time there was this belief that, like, you could have too much blood, right? Too much blood that would, like, fill up your blood vessels and fill up your brain and make you hot.

Justin: And yeah, we got an answer for that one. That one we can fix.

Sydnee: Yeah, we can fix that one. [laughs]

Justin: We invented this condition because it's one we can fix. [laughs]

Sydnee: There was what he called pathomatic, which was like, uh, emotional. Probably psychological is the word we use today, but amnesia triggered by some sort of strong emotional response to an event. Something like that. There was cephalgic, which was following a headache, so you get a really bad headache and then you forget everything. I don't know.

Justin: Okay...

Sydnee: Intoxication, you can figure that one out.

Justin: Yeah.

Sydnee: And then febrile, which is probably like a meningitis or an encephalitis, or something like that. So, this was a really good, like, complete picture. I mean he still is leaving some stuff out and there's some stuff to understand, but that's pretty good for the time period, of all the different reasons why somebody might forget everything.

Justin: Okay.

Sydnee: And this kind of breaking it down would lead to a lot more academic interest in general. Once he kinda published this, and he didn't just do amnesia by the way, he did, like, all disease laid out into like, defined and named and classified and all that. But this would really get people to study amnesia more and like broaden it to— also, strokes could cause forgetfulness, and also there was this thought that hunger, if you got really hungry, you would forget things. [laughs] I don't find I forget things. I just get really angry.

Justin: You forget to not be nice to me.

Sydnee: That's true. That's fair.

Justin: You forget to be nice to me, sorry.

Sydnee: [laughs]

Justin: Or anybody, or basically you just forget sort of basic humanity. You become like unto a monster, I guess is what I'm saying. To put it generally.

Sydnee: You can stop now.

Justin: I don't know why I'm still talking, that's the problem.

Sydnee: There was also some interest in is it permanent or temporary. It seemed like depending on the cause, amnesia could sometimes be reversed. So, like, febrile amnesia, that means amnesia with a fever, so they're probably talking about some sort of infection, seemed to go away.

Justin: Okay. Because, with the fever, right? Or later?

Sydnee: Mm hmm. Because, I mean, think about—and you're probably seeing some delirium in here that wasn't, like, teased out yet. I mean, think about it. With a really high fever, people can get confused and not seem to remember what's going on around them, and then after it goes away, they get better.

Justin: Right.

Sydnee: And then they noticed that other kinds of amnesia seemed to just persist.

Justin: So, it's less amnesia and more just like having trouble connecting to the real world?

Sydnee: Yes. That's when we also get Korsakoff, who described a very particular amnesia that came with the long-term use of alcohol, which we know as Korsakoff's Syndrome.

Justin: Oh, of course.

Sydnee: Which, you know— [laughs] Well, it's a known entity today. It's very distinct to long-term, you know, regular use of alcohol. And it also began to be observed that older memories tended to stay. And that's one

of the things that I always think is interesting with cinematic depictions of amnesia, is that people tend to forget, like, I mean, like I said, where they're from, who they're parents were...

Justin: Right, Their name, their life, yeah.

Sydnee: Yes. All the stuff that would be the oldest, mostly deeply-ingrained memories tend to vanish as well. And those actually tend to stay. Not always, I mean there's different kinds of amnesia and we'll get into that. But generally speaking, you tend to remember the older stuff, and it's the more recent memories that you forget. And you actually get them back in the reverse order, if you do get your memory back, that you lost them. Which is kinda weird. That's what they tended to observe.

Justin: The brain's weird.

Sydnee: And again, this is all, now our understanding is way more complex and it would depend on what kind of amnesia and why it happened and all that kinda thing, but the basic idea is that, like, the way that you would lose information, and if you think about older memories versus more recent ones, this will kinda make sense. So, recent events that just happened, you're gonna lose first, because they just happened. Then you're gonna lose some ideas. Concepts and ideas. Cause those are not as ingrained as, like, sensory experiences and memories that you had. Ideas.

Justin: Okay.

Sydnee: Then you can start to lose emotions, next. And then you start to lose the habits and the routines, like the stuff that you— what we kind of think about as muscle memory. That would be further. So, I guess you could make the argument that, like, you would forget how you got in the car crash that caused your memory, but you would not forget how to drive the car really fast.

Justin: Okay.

Sydnee: You know what I mean?

Justin: Right.

Sydnee: And then finally, the oldest memories, the stuff that is the most organized, the most fixed, that you have sensory experiences associated

with, those fixed memories that you probably also have reinforced through repetition and through looking at photos, do you know what I mean?

Justin: Mm hmm.

Sydnee: I mean, because we do that to our memory. We talk about that trip to Disney that we took, you know, a decade ago.

Justin: I know that we're only, we can only— I saw this on that show Quiz. Remember we watched that three-part mini-series, Quiz, starring Matthew McFadden of Succession fame?

Sydnee: Yes.

Justin: And they talked about how you can't— every time you remember something, you're remembering the last time you remembered it. So you remember— it's a memory of a memory of a memory of a memory. So there's a lot of degradation there.

Sydnee: Yes.

Justin: It's really interesting, the way that the brain can mess stuff up like that.

Sydnee: It does, it messes stuff up and it reinforces whatever that idea is the more you recount that memory. Whereas something that happened, you know, ten minutes ago, I haven't had enough time to continue to reinforce that memory. You know. That's why older memories tend to stay. Again, this is all generally speaking. And then there's the distinction between anterograde and retrograde memory loss. Anterograde is like Memento.

Justin: Okay.

Sydnee: Or what's the other movie?

Justin: Blank Slate.

Sydnee: Yes. Finding Dory.

Justin: Okay. There's this trilogy. Finding Dory, Blank Slate starring Dana Carvey, and—

Sydnee: 50 First Dates.

Justin: 50 First Dates, Memento...

Sydnee: Yes. So you can't make new memories.

Justin: Can't make new memories.

Sydnee: So stuff just keeps happening, like the present is constant.

Justin: Oh, I'm there. Is that what's going on? I'm there now.

Sydnee: [laughs]

Justin: I'm living that dream.

Sydnee: It is actually... we are not suffering from collective amnesia, anterograde or otherwise, but it is actually harder to make new memories when the days become difficult to distinguish. The passage of time starts to become nebulous.

Justin: That's why you have so many more memories, or why, uh, things seem to go faster as you get older. Is because your brain reacts to novelty. It saves novelty. So, when something happens to you for the first time, something new, your brain's like, "Oh this is cool, I'm gonna remember this. I'm gonna hold onto this." But as you get older, or as you get locked in your house for months on end, the lack of stimulus becomes such that, like, you aren't forming the memories. The time seems to get even more messed up because without novelty your brain isn't activating and saving those memories. Because it's like, "Yeah, I've done this, I don't need to save. This is, I don't need to remember any of this. I've seen this before. This is fine. Just do your thing."

Sydnee: Which, again a slight diversion, one thing that you can do to help combat that is if you can come up with anything new to do. [laughs] Anything new to experience, that's really good for your brain right now. I mean—

Justin: What are Sydnee and I doing? We're gardening. We're composting. We're woodworking.

Sydnee: Yes.

Justin: We're recycling. We're trying to become more sus— more, what's that? Sustainable?

Sydnee: I've starting knitting again.

Justin: Knitting. Sydnee's back on the knitting tip.

Sydnee: Yeah, anything, especially if it's like a new— this is a moment to, like, I'm finally gonna learn to play the piano, or whatever. You know, something. But anyway.

Justin: Anyway. Neuroplasticity, folks.

Sydnee: The other part about amnesia that you've gotta kind of understand to understand why it's happening and, if you can fix it, how to fix it is what part of the memory process has been disrupted?

Justin: Because it's a system.

Sydnee: There's where you take in the information to make the memory.

Justin: The hypothalamus.

Sydnee: Well, no. [laughs] But my point is, is it the making the memory or is it the retrieving the memory?

Justin: Okay.

Sydnee: Right?

Justin: So, to use kind of, um, Inside Out. Is it— I don't remember, do you remember the little guys that go get the memory?

Sydnee: Yeah.

Justin: So, is it them that's broken, or is it the little console that they use to save the memories up in the, where all the emojis live.

Sydnee: Or has stuff been dumped into— remember when she forgets things and like, the... Boing, Bong Bong? Boing Bong? Bing Bong? Bung Bong?

Justin: Richard... what's that guy's name?

Sydnee: The imaginary friend. Anyway, [laughs] the point is, the point is when we talk about amnesia and this idea that, like, you can retrieve memories, it's important to know if the memories are still there to retrieve. Like, what part of the brain has been damaged?

Justin: Richard Kind!

Sydnee: Thank you.

Justin: That's his name, sorry.

Sydnee: Yes. It's important to know, like, because if you're talk— I think, and we're going to get into this some, there's this idea with amnesia that it's all in there, right? You just have to, like, find it. And that assumption is that the retrieval is the problem. Accessing the memory is the problem. But a belief that the memory has to be there.

That's not necessarily always true with different kinds of amnesia, because if you think about it, it really depends on what caused it and what's been damaged. But sometimes the memories are gone. And then the other thing is were the memories made to begin with? Which, again, I'm going to get into a little bit more in the back half of the show with, like, the idea of retrieving childhood memories. You don't make memories in the same way with a child— like, when you have your child brain. Your early, early, early baby brain does not, cannot make memories the same way that your grown-up brain can.

So, is the memory—was it ever there? All of this is part of the process, and if you're gonna fix it you have to really know what went wrong, you know? Which is why there's not a one— there's not one pill for amnesia that makes it go away. But before I get to that, let's talk a little bit more about the Max Fun Drive.

Justin: Absolutely Sydnee. MaximumFun.org/Join. We're asking you, we come to you once a year and ask you to join our family. And that is really what it is. Max Fun is an extended podcasting family. We're asking you to become a member of it and join with us. Whatever you can pledge is a huge help. \$5 a month, you're going to get a massive amount of bonus content. Over 200 hours of bonus episodes, including Fast and Furious and Justin and Sydnee.

Sydnee: Don't listen to it all back to back. Like, take some breaks, drink water in between.

Justin: [laughs] That's right. It's very insane.

Sydnee: It's 200 hours, that's a long time

Justin: Oh, I thought you were talking about Fast and Furious and Justin and Sydnee. [laughs] This is very intense listening. If you can do \$10 a month, you're going to get a pin. A beautiful enamel pin designed by Megan Lynn Kott. Ours [laughs] just says "Homeopathy means pretend". Which I had forgotten because we did it months ago, but it's still pretty good.

Sydnee: But it's a great pin, and you get to pick whatever pin you like. I like our pin best, but you can pick any pin.

Justin: You get the bonus content, you also get a Max Fun membership card. Where does this money go? Well, a small percentage of it goes to Max Fun to help run the network and keep things moving. We have ad sales teams that are working and different people that are helping us make these shows. The majority of it goes to the shows you listen to. You chose the shows that you enjoy when you sign up and then you just, uh, you just give money straight to them, basically.

Sydnee: Yeah. When you sign up you just click whichever shows you listen to, so if you're listening, you know, to this show, we could be one of them.

Justin: Yes, that would mean a lot. If you can give more than ten bucks, there are other gifts. If you can pledge, let's see, at 20 bucks you get a game pack, which is all the stuff from before plus some Max Fun dice in a dice bag and Max Fun playing cards and hidden Max Fun symbolism all over it, looks really cool. And 35 bucks a month there's a camp mug with the Max Fun rocket logo on it. And all the other stuff. But the real thing you're doing is you're making it possible for me to, us to make these shows.

Sydnee: And we're so grateful. If you are a member, if you're already part of our family and donating, thank you. Thank you so much. If you're considering doing it, thank you. If you can't right now, but you share our show and tell somebody about it and share a link and you know, tell people, that's great too. Thank you for helping us continue to do this.

Justin: Yes. We very much appreciate you. Okay, so where were we?

Sydnee: Now, the really interesting stuff, and I'm just gonna get into it a little bit first, is how do you, when you get into things like people forgetting because they, you know, something has happened and they've forgotten, or as we've seen in, like, you see this used in movies and the question from a legal perspective has been is the memory loss for secondary gain? And that's where you get into some really interesting, like, concepts about amnesia. If you think about, like, a murder trial.

Justin: Mm, right.

Sydnee: Did you really forget what happened, or are you saying you forgot what happened? That kinda thing. And in addition, in the early studies of memory loss and amnesia, we started to also study dissociative identity disorder along with that. You know, to try to understand how does that happen that, you know, you forget, so to speak, who you were and what you were doing and all that kind of stuff.

Justin: If you're unfamiliar with that, you will have seen it so tastefully and accurately depicted in the movie Split.

Sydnee: [laughs]

Justin: That is a perfect—

Sydnee: No.

Justin: It's perfectly scientific, as you said. I remember you saying as we watched the film, you said, "This is perfectly accurate and scientific."

Sydnee: No.

Justin: No,

Sydnee: No, I never said that.

Justin: That's a memory, though, isn't it? Isn't that inter— I don't know! I have that memory, you don't. No one can say.

Sydnee: [laughs] Plus, we began to understand if trauma could induce memory loss as like a protective mechanism. If you could have some sort of traumatic event and you lose all memory of it because it's too much for your brain to experience, right? And that was the early understanding of it. We're doing this— your brain's protecting you. I'm gonna forget all this

because it's too much for us to handle. Then some started to argue, like, well this is just physiology. This is good. Our brain is doing what it should do. We should encourage that kind of amnesia.

Justin: That's wild.

Sydnee: Which is like Homecoming, right?

Justin: Right.

Sydnee: Remember, the podcast?

Justin: Oh, yeah, yeah.

Sydnee: It's like, what if we could take away all your memory of all the bad stuff that ever happened to you and then send you back out into the world.

Justin: Not back out into the world in that case, it was get you pumped to do a war again.

Sydnee: Well yeah, that was bad, but—

Justin: Not great.

Sydnee: But anyway, and then others, you know, started to write about, like, true traumatic memory loss could leave you in a constant state of not knowing the present from the past and you could just re-experience that trauma constantly because it's, like, trapped in your mind's present. Because it has not been made into a memory. Anyway, all this became very interesting to the alienists. Especially the French alienists. Do you know what an alienist is?

Justin: Um, well, we did talk about it in the car yesterday.

Sydnee: That's true.

Justin: Should I— But—

Sydnee: You can go ahead if you'd like.

Justin: I don't remember. But that's memory, isn't it? I mean...

Sydnee: [laughs] There's a show now, so I think it's more popular because there's a show called *The Alienist*, which is based on a book called *The Alienist*. So alienists have nothing to do with, like, extra-terrestrials.

Justin: Not that they would tell us if they did.

Sydnee: [laughs] *Alienist* used to be the name for a psychologist or a psychiatrist, and it comes from the French, *aliéné*, for insane. And it was basically alienists help people who have become alienated from reality or from themselves. From their true selves that they cannot access because of their mental illness, that kind of thing. And early alienists really approached all this in a biological way. Psychiatric disease is a medical problem just like all other medical problems, there's anatomical and biological roots and so those must be the treatments.

The alienists of the 20th century took it into, like, depth. Like psychoanalysis, depth psychology, like Freud. Sit on the couch and let's get into your deepest, most repressed thoughts. It's interesting to see how I feel like we've come back the other direction again. You know. And then, and so then from there they started to get into ways to treat amnesia, based on all this that they understood now.

One of the first early treatments was from a French doctor and psychologist, Paul Sollier, who practiced back in the last 1800s and early 1900s and said basically you could help with amnesia if you could find, like, a memory. And the way you find it is through their sensory memories of it. Like, you could retrieve some of the memory based on, like, what did you smell, what did you hear, what did— let's describe the surroundings and then fixate on it and then continue to re-establish it, continue to discuss it, to stabilize it. That you could slowly recount memories from the past.

And he thought this was particularly good with trauma, like if something was traumatically induced, you could recover memories that way. But he found with things like dementia that didn't work quite as well. So, those were some of the earliest ways to try to treat it. Now, of course things have gotten better. And I wanna talk about that and some of the myths, but before we do that...

Justin: I dunno. What?

Sydnee: Let's go to the billing department.

Justin: Let's go!

[ad break]

Sydnee: Okay, so before I get into one of the most-often cited treatments, I think in TV and popular culture, I wanna talk about one specific problem. Which is, as you mentioned, in a lot of depictions of amnesia it happens because you got hit on the head and it resolves when you get hit on the head again, right?

Justin: Yes. Which even the— [laughs] When you brought that up, I was like, "Oh, well yeah, what happens with amnesia is you get hit on the head and then you get hit on the head again, it makes the memory come back". And I was like, as I said it to you I was like, "Wait a minute, that can't be right. That can't be the way it works." So, I'm assuming that is inaccurate.

Sydnee: Now, as I mentioned, there was a time when as we— the study of the brain was, like, neurology, psychology, it was all kind of combined for a long time. Like, all of it was acting together. Which, again, I'm not saying as a criticism. Like, the more combined, you know, all these things are, the better understanding we have of them. But when we first saw the anatomy of the human brain, that it has two hemispheres, one of the theories that began to develop around it is that they almost did the same things, just like a backup system, sort of. Like, just in case I guess one half goes bad, you got a backup half. Which, I mean, again, isn't a wild idea when you consider that, like, your kidneys kinda work that way. If you only have one, you can still be fine. You've got, like, a backup.
[laughs]

Justin: Right.

Sydnee: So, because of this idea, the thought was that if they get out of— like, if they become unsynchronized, then you'll have problems. Then you get, like, malfunctions. So, our main thing with the brain is keeping the two hemispheres in sync. And there was, at the turn of the 19th century, there was a French scientist, Francois Bichat, who said that, you know, he believed in this, that the two hemispheres just mirror each other, and so if there is an injury on one side, like, if you hit your head on the left and that side of the brain gets, like, knocked out of sync, then it

only makes sense that the way to fix is to hit your head again on that side—

Justin: That doesn't make sense.

Sydnee: To knock it back in sync. [laughs]

Justin: No. No, Francois. No. That doesn't make sense. Think about what you're saying.

Sydnee: So, that way then they're back in balance. You just gotta balance out the two hemispheres.

Justin: Can you imagine going to this guy, and you're like, "Anyway, hey, so sorry I'm late. I missed my appointment because, well, amnesia, and I'm hoping you can fix this for me. What's your solution?" And this guy's like, [French accent] "Well, well, well, what we shall do is, uh... ze bonk on ze head." [laughs]

Sydnee: [laughs]

Justin: Like, "What? Sorry?" "Yes, uh, ze bonk. Like ze last bonk on ze head. Ze bonk on the head." Imagine.

Sydnee: [laughs]

Justin: Unthinkable.

Sydnee: Well, here's what's wild. This is where, like, certainty, self-assuredness, goes so far in this world.

Justin: I'm imagining he was a white dude. [laughs] Like, only option, right? Has to be.

Sydnee: So, he said, he wrote about it. But he never wrote, like, it wasn't a list of, "Let me give you all the evidence, here are all the times where this worked," or "Here's the studies I did." He just said this happens so much that we know it's true.

Justin: "Seems like ze bonk on ze head is ze cure."

Sydnee: No, I mean, he stated it as a fact. As if everybody would be like, "Well of course, yeah. That happened to me."

Justin: "The second bonk, obviously."

Sydnee: "Everybody knows that." But—

Justin: And he didn't have TV, which is wild. Right, like, he didn't have like, "In Season 4, Episode 13 of ze Brady Bunch, you can see that Jan gets hit with ze football." [laughs] Like, he... what is he basing this on?

Sydnee: He just said, "obviously".

Justin: Obviously.

Sydnee: Obviously.

Justin: Obviously.

Sydnee: Obviously.

Justin: "Ze second bonk."

Sydnee: So, despite the fact that he tragically died of a head injury in 1802—

Justin: Stop it. Impossible.

Sydnee: His work outlived him, because the idea that brain asymmetry is the main problem in a range of, you know, psychological, neurological disorders, that persisted for a long time. Bichat's Law of Symmetry. And this idea that the second bonk would fix amnesia also persisted. And it really wasn't until, I mean, like 100 years later that people began to say, "You know, I actually think that getting hit on the head again will just cause more damage." [laughs] That head injury can cause brain damage, and another head injury could cause more brain damage, and we should probably not do that. But even today, you see it depicted. Which is, I mean, we know that, right? Like, please don't. If someone has lost their memory, please do not hit them on the head.

Justin: Yeah.

Sydnee: Actually, even if they haven't lost their memory, don't hit people on the head.

Justin: Yeah.

Sydnee: But generally speaking, head trauma does not restore memory, despite, you know, all of cartoons. [laughs]

Justin: Which is wild— that's like a weird... it's like, um, it's almost like the genetics of culture, right? It's like a cultural osmosis where it's just like, for generations. Like, that's not coming from science. It's just generations of media, frickin', like, comic strips and novels and stuff popularizing this idea, and then that concept gets passed down and down and down until everybody's like, "Well yeah, yeah, yeah, the second bonk. Obviously." [laughs]

Sydnee: Which underlines, by the way, a theme on our show. Which is just because something persists for thousands of years, does not mean it's true.

Justin: No.

Sydnee: This did not persist for thousands, but still. You get the idea.

Justin: It's called appeal to ancient wisdom. That's a logical fallacy. We've tried to puncture it as much as possible with our podcast.

Sydnee: The other big thing I wanted to talk about before we finish is in a lot of popular culture you'll see hypnosis used as the way to retrieve memories.

Justin: Yes.

Sydnee: Have you seen that? Usually on, like, a crime series.

Justin: Yes. They'll take them deep.

Sydnee: Yes.

Justin: And they'll recall.

Sydnee: The idea that you could fix amnesia with hypnosis is a pretty old one. Freud would use hypnosis to try to retrieve old memories. So, the idea that if somebody has lost their memory you could, you know, fix it with hypnosis, it dates back quite a while. Now, again, this rests on the idea that the memories are there. That you made them fine and they're still stored fine. And they've been organized fine and, you know, repeated fine and all that, but the retrieval is the problem. And that has to be the

truth if hypnosis is gonna work. Which in my head, I thought like, it's sort of like saying you're trying to land at an airport with no landing strip by buying bigger, better planes every time.

Justin: [laughs]

Sydnee: So, anyway, as long as that's the problem then in theory hypnosis could work. In theory. Obviously, it would have to also be proven to work. And these are usually used for some sort of emotional trauma, not physical trauma like head trauma, but emotional trauma. You'll see hypnosis used to, like, you've repressed a memory because it was too upsetting and so we're going to use hypnosis to find it, or to, like, tell you something about your childhood that you don't remember very well. Or to help you remember details of, like, a crime scene.

Justin: Yeah. Or a past life, perhaps.

Sydnee: Or a past life, I guess. [laughs] I wasn't gonna go there. That's way outside my expertise. [laughs]

Justin: Yeah, but if someone says I can help you remember that you were homies with Bonaparte and then you're like, "Well, um, maybe..." you know, and then later they're like, "I can help you remember a crime scene," maybe we don't believe the second part so much. Because we do still remember the part where you said that I knew Napoleon in a past life.

Sydnee: Right. Right, exactly. And well, and all of these things, people who— I don't wanna paint too broad a brush. You can be, you can— there are hypnotherapists, and they can specialize in just one area. And I'm certain there are hypnotherapists who would say, "Well, age regression doesn't work, forensic hypnosis doesn't work, I don't do past lives, but I do this for weight loss." That is out there. There are hypnotherapists that specialize in lots of different areas.

Justin: Let's do an episode about hypnosis at some point, so we can talk about this.

Sydnee: We need to. Hypnosis is a wide-ranging thing. I just wanna— and it's so big, I just wanna focus on the memory retrieval aspect of it. And in addition, what I've just mentioned, forensic hypnosis, is a big area of interest. The idea that you could use it to solve a crime. So, does any

of this work? Hypnosis for any of these memory reasons, amnesia reasons.

Well, first of all, hypnotic age regression, which is like, "I can't remember something that happened to me as a child, so I am—" and this is usually done in like a therapy realm, "I'm going to hypnotize you to take you back to when you were six, or whatever. Make you six again. I'm going to— you are going to be six years old, sitting here today. And then you will be able to recount, relive, re-experience, remember whatever happened." Right?

Justin: Yes.

Sydnee: Okay. So, what we have found with that is that even though people will subjectively say, like, they will describe feeling like a child afterwards, they felt like a child. They acted like a child. We have seen this on, like, in these interviews. You cannot change the brain back to the stage of development, of cognitive development, to make you think like a child.

Justin: Right.

Sydnee: We cannot do that. We have no objective proof that we're actually doing that with hypnosis. And that's what you would have to do to make you...

Justin: This is the problem with hypnosis. I don't wanna keep talking about hypnosis, because I wanna do an episode on it. But, like, what I think does work about it in my limited understanding is making you very open to suggestion.

Sydnee: It does make you very open to suggestion.

Justin: So, if I were to suggest that you were six now, I think that is well within the bounds of the power of hypnosis.

Sydnee: Yes. [laughs] Well, I think what they've said is like, if you accept the idea that putting someone in sort of the— it's like taking somebody to the right room of the house, to help them remember how they felt about something. Like, recreating the circumstances. Could it help you remember something? I don't know. Maybe. Maybe. Like, smells do that. We know a smell can trigger a memory. So like, putting somebody in the mindset of acting like a child, could it, yes. But, we have

no proof that you're actually remembering things you didn't remember before. You know?

Justin: Yeah.

Sydnee: That you're actually— and again, part of this goes back to, like, if you're trying to take somebody back to, like, the really wild stuff where, like, you're reborn. If you're trying to take somebody back to a memory that happened when they were like, one or two, well, you don't store memories. Do you remember anything from when you were one?

Justin: No.

Sydnee: It's not because you can't— it's not because your memory won't go back that far. It's cause when you were one you weren't making memories the way your brain does now at 39. It just, your brain doesn't do that.

Justin: Right. I was busy. My brain was busy learning how to, like, walk.

Sydnee: Walk. Yes. Your brain wasn't recording information the same way. So, it's just not possible. The other thing is the idea of, like, hypnotic hypermnesia. As opposed to amnesia, hypermnesia.

Justin: Like, remembering too good?

Sydnee: Like super-memory.

Justin: Okay. Right.

Sydnee: Like, extra memory.

Justin: Like Marilu Henner. Like friend of the family Marilu Henner.

Sydnee: Yes. Can you induce that with hypnosis? Which I think of more like when you see on TV, like, the memory palace?

Justin: Sure, yes.

Sydnee: It's like that idea. Like, maybe we could make you have a super memory if we hypnotize you. That happens on the show we were just watching. Dispatches from Elsewhere.

Justin: Yeah, that's true.

Sydnee: Yeah. If you hypnotize somebody, you could make them like go back into a memory and see things that they didn't see before. And what we have found in studies of that is that, no, you are no more accurate after hypnosis than you were before. You are just more certain of whatever you're saying. [laughs]

Justin: Mm. Okay.

Sydnee: We turn you into a surgeon. I'm sorry surgeons.

Justin: Ha! Ha, ha.

Sydnee: I'm sorry. Just a little joke.

Justin: Something everybody— a joke everybody can enjoy.

Sydnee: Just a little joke for my surgeon pals. I'm kidding, I'm kidding. And then of course there's forensic hypnosis, which is how do we get a witness to a crime to help us solve the crime by hypnotizing them and so we get more details from their witness statement, so that they remember the incident more clearly. Whether it be a description of the, you know, attacker, or a license plate number, or whatever. Right?

Justin: Sure.

Sydnee: And this has been used, I mean, it may still be used to this day. [laughs]

Justin: In TV and movies, or in life?

Sydnee: Like in life!

Justin: Oh no.

Sydnee: I mean, I have found early 2000s cases where this has been used. I believe this may still be tried.

Justin: Be a thing? Yeah.

Sydnee: I couldn't— it was hard to discover if, like, there are still forensic investigators who are doing hypnosis. Because it's like a specific branch of hypnotherapy, to do this. And there isn't a lot of data for this either. There are, like, anecdotes. I found this specific kidnapping case, Chowchilla, from like the 70s, where a bus driver with a bunch of kids,

they were all kidnapped and kept somewhere underground and the bus driver like, dug their way out to get them out. But anyway, supposedly the bus driver was hypnotized to remember part of the license plate and like remembered such a big chunk of it that he couldn't remember before but then once he was hypnotized he remembered a big chunk. So there are these anecdotes, right?

Justin: Right.

Sydnee: But then there are other anecdotes I found where, like, in Boston there was this Brinks armored car robbery and they hypnotized the witness for the license plate number of the getaway car and he recounted a license plate number perfectly under hypnosis, and it turned out to be the license plate of the president of Harvard's car. Not because the president of Harvard robbed the armored car, but because the witness worked at Harvard and just saw that license plate a lot.

Justin: Hmm.

Sydnee: So, all of this—

Justin: Or! Or there's a far more compelling possibility, Sydnee.

Sydnee: [laughs]

Justin: The person you least expect.

Sydnee: The president of Harvard.

Justin: The president of Harvard is... the Pink Panther.

Sydnee: No, none of that... no. But the thing is, and there have been other studies where like, they've had simulated crimes and—

Justin: I know the Pink Panther is the diamond. Get off Twitter. Close the app.

Sydnee: [laughs] Anyway. There are these wild studies in which, like, they have simulated crimes in front of witnesses. Like, they don't tell them that they're about to be part of a study, and then they, like, do a fake crime in front of them.

Justin: Do a science all around them.

Sydnee: Yeah. I mean like, you'll read these older studies that probably wouldn't be approved today. And then they'll, like, interview people and then interview them under hypnosis. And they've done this with real crimes, like ride-alongs, to try to like, actually see. Can we get— and it just, there's no evidence that it ever works. It really, it improves your certainty about memories, but it's really easy to suggest things, to implant things, with this process.

It's very difficult to tease out because our brain wants to fill in gaps, and so hypnosis encourages us to fill in those gaps by thinking, like, well this helped me, so whatever I think makes sense there probably is the memory and not just what my brain is confabulating to fill in that gap.

So, I wondered if it is still admissible in court, was my big question. And from what I found, and I am not a lawyer, but I did reach out to my uncle Michael, Michael Meadows of Court Appointed. They do a legal history podcast similar to what we do. Him and my dad. I reached out to him and I talked to him about it, and from what I can tell, if it meets something called the Daubert standard, which has to do with, like, an expert witness testimony fulfilling, like, basically accepted as this is what an expert would say, or yes, this is real, kind of thing. Like, how you judge whether expert testimony can be, you know, admissible in court or not. If it meets that, then it can be.

And from what I found, there are times where, like, hypnosis has been found very clearly not to. Because it is not widely accepted by the scientific community. But then I found that other times where it was admissible in different trials. So, it was hard for me to tell. I think it varies. I think it varies state by state and I think it varies probably judge by judge. So, I really think it might be up to the specific trial in some cases.

Justin: Wow.

Sydnee: But it's weird for me because it doesn't— it seems like we have no evidence that it actually does help with memory retrieval in any way. Just anecdote. The only thing that I will say is that there have been some therapists who have spoken out in favor of hypnosis specifically for dissociative memory loss. So, if it is associated with dissociative identity disorder, hypnosis as part of therapy, as part of, like, a whole therapeutic range of, you know, treatments, not in isolation, but has been used with some, like, easing of anxiety around the memory retrieval. Around the

process of, like, re-remembering those things you've forgotten. They have found sometimes hypnosis can help with that anxiety that can be associated with that, Because I imagine that can be very anxiety-provoking, to start remembering this whole identity that you had forgotten.

Justin: Yep.

Sydnee: But the idea that it's this dramatic, we hypnotize you and then you wake up and go, "I'm Sydnee!" Like, that's not... that's not real. That doesn't work. And the only other thing about amnesia and hypnosis. You know how after hypnosis you're supposed to have amnesia? Like, they induce amnesia, right?

Justin: Right, right, right.

Sydnee: They don't want you to remember anything that just happened.

Justin: Yeah.

Sydnee: I tried to read why. Why do you want people to forget it all?

Justin: Uh... I dunno.

Sydnee: The answer I basically got was that it was stressful and we don't want you to think about it too much.

Justin: [laughs]

Sydnee: Which leads me, as a scientist, to say is that because it didn't work and we don't want you to think about it too much? Because then you'd figure it out?

Justin: Be honest.

Sydnee: Anyway, how do we treat amnesia? Well, it depends on the cause. With things like Korsakoff amnesia, we found specifically, like, thiamine can help. But not for a lot of other things. There isn't one pill. You'll find, like, memory loss associated with dementia, you'll hear a lot about medicines on TV that can help, but what they're talking about is slowing the rate of the progression of dementia. It's slowing down how fast that progresses. They don't turn back time. They can't go back and

fix what has already happened, and I think that's really important to understand about those meds.

There are a lot of things like working with an occupational therapist, learning strategies to help keep memories and improve, like, the repetition and retrieval of what is still there, and digital aids to organize information as you're learning new things to help you keep and make new memories in a more organized fashion. They're all kinds of ways that occupational therapists can really help with that.

And then preventing memory loss. Like, the easiest things are managing chronic illnesses like diabetes, or heart disease, or cerebrovascular disease that can lead to strokes, that kind of thing. Cardiovascular exercise is good for your brain. I know that sounds weird. Do your crossword puzzles, that's great, but also do something that gets your blood pumping, that gets your heart pumping.

Justin: Well, Sydnee, there's nothing that gets my blood pumping and heart racing like a good crossword puzzle. When I get an 8-letter word with no clues to be seen, I feel like I've just— you ever seen the movie Crank?

Sydnee: No.

Justin: Um, it's starring Jason Statham.

Sydnee: Is it about crossword puzzles?

Justin: No. But it's like, that's— it's like adrenaline, that's like what I feel. You know what I mean?

Sydnee: Okay.

Justin: If his heart slows down, he dies.

Sydnee: Oh.

Justin: So, he has to keep— [laughs] It's like Speed, but for a human heart.

Sydnee: But for the heart.

Justin: Yeah. We should actually—

Sydnee: This does not sound—

Justin: This an episode.

Sydnee: Oh no.

Justin: Now that's an episode right there. Crank.

Sydnee: I don't wanna see this film.

Justin: Oh, there's a Crank 2, don't worry.

Sydnee: Uh, exercise, healthy diet, and I would recommend that you try to avoid head trauma whenever possible. [laughs]

Justin: You might also say don't drill a hole in your head.

Sydnee: Well, that too.

Justin: Thank you so much for listening to our episode. We wanna ask one more time, it's Max Fun Drive time. If you could donate, we would really, really appreciate it. To people who have already, like, gotten on board, thank you so, so, so much. MaximumFun.org/Join is the place to do it. If you haven't been able to become a member, now's the time. For five bucks a month, if you can do five bucks a month it's hugely supportive of us, but it also gets you a ton of bonus content. Which is awesome.

Sydnee: Yes. So please, if you're in a position to do so. We thank you so much if you already are a member, if you're already donating. We really appreciate it. This brings us joy and we hope we can bring you joy.

Justin: Yeah. Did you have something you wanna say, Sydnee?

Sydnee: I wanted to say that if you're more interested in forensic hypnosis, Court Appointed is gonna do an episode, to delve into more of the legal side of it since I didn't understand all that. When can you use it in court, when is it okay, so.

Justin: Either this week or next. Court Appointed, wherever fine podcasts are sold.

Sydnee: Yeah. With my dad and my uncle.

Justin: Thank you to The Taxpayers for the use of their song “Medicines” as the intro and outro of our program, and thanks to you so much for listening and supporting us. We very much appreciate it. But 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]

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