

Episode 1: Governing Animals

Ryan: Alright guys, we have to be careful, we don't want to interrupt the time stream.

Patrick: Hey Ryan, we're already recording.

Charlie: Hey there paleo posse. You may not know you're called that but you are. At least you will be.

Ryan: Yeah, listen Charlie, I'm just going to come out and say it. This is a message from the future.

Patrick: Dammit Ryan.

Ryan: Listen, Patrick, they deserve to know.

Patrick: Well, they also deserve to know the reason we're even recording this message.

Ryan: Yeah, if they can't deal with a little bit of rambling then they should learn to.

Charlie: Ah, seriously, so, let's get this over with. The less we say the better. I'm Charlie and you have a ways before you get to know me.

Patrick: Yeah, so I'll fill you in a little bit. Ah, basically, this is the first episode.

Ryan: And it definitely sounds like a first episode.

Charlie: Sounds a lot like a first episode. It gets better. You get me.

Patrick: Yeah, so, if you appreciated the content but thought the sound quality was a bit lacking...

Charlie: Maybe you thought the format wasn't quite gelled yet.

Ryan: Yeah, we get better at this, we promise.

Patrick: Yeah, so hang out for a few more episodes.

Charlie: Maybe five, possibly ten.

Ryan: And we're up to 48,762 episodes at this point. They solved the time travel and audio editing issues at some point in the future.

Patrick: Yeah, so we just wanted to let listeners in the past know that if you couldn't tell from this that the show improves continuously.

Charlie: Just like science, it works bitches.

Ryan: Sort of. But anyways, thanks for listening at all, we'll see you next week for the past episode 2 or 10.

Charlie: Yeah, well, it's 2 in binary, or, if you spell it out it's IO, the Jovian moon.

Patrick: Ah, yeah, but also the actual number 10.

Ryan: Where there'll be a whole lot more science.

Sort of.

Announcer: Hello, and welcome to Science... sort of.

1:41

Ryan: Hello and welcome to Science... sort of, Episode 1 with your hosts the Paleo Pals. I'm Ryan.

Patrick: I'm Patrick.

Justin: And I'm Justin.

Ryan: The purpose of our show is to discuss things that are science, things that are sort of science, or just plain geeky. Today's topic is governing animals. And topic one is the Lock Ness Monster found on Google Earth.

Patrick: Okay, yeah, this thing, this is a pretty amusing article. I guess, its reported in a lot of the British press and got picked up on, you know, plenty of American aggregators as well. But apparently if you type in Lat 57°12'52.13"N Longitude 4°34'14.16"W in Google Earth you'll see an unbelievable picture of a green boat.

Laughter.

Justin: Are you sure it's a boat?

Patrick: Ah, it looks pretty boat shaped to me. Maybe one of those with some sort of towing thing off the back which I guess they're interpreting as the neck.

Ryan: Yeah, I guess the monster itself would be facing Southwest.

Patrick: Yeah, I guess in that picture. Whereas the boat might be headed the opposite direction if it is a boat.

Ryan: The way its fins are pointing doesn't even make sense.

Patrick: No, yeah, if they were to be fins, it doesn't make a lot of sense.

Ryan: Right. I mean, imagine it swimming like a turtle.

Patrick: Well, yeah, the guy, I guess, Jason Cook, ah, so this guy is 25, lives in Nottingham and apparently he's a security guard and so I don't know if he was browsing Google Earth while he was on the job or not but he says yeah.

Justin: You guys are being way close minded. I mean come on.

Laughter.

Justin: It's assumed it's a plesiosaur but what if it's not? What if it's like a weird shelled aerodynamic plastic animal, right? That can ah, apparently has a hull.

Ryan: Plastic as in it's a child's toy? Or plastic in that it in that..

Justin: Plastic, you know, with a hull and a fore and aft and starboard and port.

Ryan: So plastic as in a boat.

Patrick: Yeah.

Justin: If I were the Loch Ness Monster I'd want to disguise myself as a boat too. I'm seeing perfect natural selection going on and I think this guy's on to something.

Patrick: Well, that's true. Well, it's had, apparently, 65 million years to get this right, so, yeah. They could be breeding themselves to look like boats.

Ryan: The guy flying the plane over Loch Ness would have noticed a giant monster. How big is this thing, if you...

Justin: If its from Google Earth it's from satellite imagery, right?

Ryan: Yeah.

Patrick: Well, so, it's boat sized.

Justin: Again, if you were a plesiosaur wanting to disguise yourself as a boat you'd want to be boat sized and not plesiosaur sized.

Ryan: Yeah, so, wait, wait, wait. I just used the ruler tool on Google Earth and it would be 67.55 feet.

Patrick: Okay, well, that's not crazy for either a boat or for a plesiosaur... an Elasmosaurus or something I guess, right?

Ryan: That's a pretty big Elasmosaur.

Patrick: Yeah.

Ryan: Yeah, that's big.

Justin: It's like a plesiosaur pleasure cruiser.

Patrick: One of these guys, one of these news stories reported the boat, someone said, you know I think it's this one specific boat that does tours of Loch Ness so I don't know. We should find out how long that boat is and see if it's the same size.

Ryan: Looking on Wikipedia under the family Elasmosauridae, it ah, the early ones were about 3 meters and by the end of the cretaceous, so, presumably, modern times, Elasmosaurus grew as large as 14 meters which is about 45 feet.

Patrick: Yeah, so that's

Ryan: That's a big Elasmosaur.

Justin: This just supports the theory that Plesiosaurs are alive and they have adapted to, ah, to camouflage themselves into the Loch Ness.

Patrick: Okay, let's just go through, if this were a Plesiosaur in Loch Ness, what are the adaptations it would have to make.

Ryan: Ah, surviving in fresh water, they were marine...

Patrick: Yeah, that would be the big one, right?

Ryan: That would be pretty huge.

Patrick: Well, Yeah. I don't know. Plesiosaurs probably swam in fresh water or estuaries, anyway, to lay eggs. So, maybe it's not such a stretch that they would be fresh water. I don't know how it ever got to Loch Ness.

Ryan: And what kind of population size do you need to sustain for 65 million years without having severe genetic deficiencies?

Patrick: Yeah, well, probably more than 1, right?

Justin: There's lots of boats on Loch Ness though, right? I bet if we, you know, if the Google Earth images are maybe two or three snapshots over the last five years, you know, I bet we could quantify how many boats were on the water and how many boats there would have been, you know. Interpolate that across the last 65 million years, that's a pretty good population.

Laughter.

Patrick: So, okay, enough with the boat defense.

Ryan: That's some pretty harsh statistical analysis, there.

6:42

Patrick: Yeah.

Ryan: Running so...

Justin: I mean, how many, maybe we should do this for the next program, but, um, we should go across the Google Earth ah, pictures and just count how many boats are in the water and you know, that's two or there satellite passes? That's what, a couple minutes of...

Patrick: Are we still on the boats are the Loch Ness monster...

Ryan: Yeah. Clearly the Loch Ness monster are river otters swimming in formation.

Patrick: Well, I think, right.

Ryan: No, that's actually, you laugh but that's the most defensible argument for what people are actually seeing. They're seeing a series of river otters swimming in line, all porpoising or breaching at the same time in synchronization so it looks like a larger thing moving through the water.

Patrick: Well, I guess Google's going to send the tricam. Right? The thing that takes the street level pictures. This is, somebody has convinced them that this is enough of a...

Ryan: Somebody's driving from Mountain View to Scotland now?

Patrick: Well, I suppose so. So, yeah, some monster expert is convinced that this is evidence for Nessie and so now Google's going to send the tricam over and we're going to get street level Loch Ness pictures.

Ryan: Are they putting the thing on a boat? Like, what's...

Patrick: I don't, well, I don't know. Maybe they are. I was assuming they were just going to drive around the circumference of the thing but maybe they are going to put it on a boat.

Justin: Somebody added to send in a resume to Google, that sounds awesome.

Ryan: Yeah.

Justin: Yeah, I want to be the guy with the tricam.

Ryan: I went to correctomundo which is one of the premier cryptozoology sites which is just, it's a very credulous unskeptical look at the cryptozoological world and even this guy was saying that he wanted people to stop emailing him the story because it's obviously a boat. So, when the guy who believes in the Jersey Devil and things like that is pointing out how obvious the boat is, I think that's pretty damning.

Patrick: Well yeah, there's this other guy, Bob Rines. He thinks that environmental conditions in the Highland Loch have changed and they can no longer sustain the monster.

Laughter.

Patrick: And I would say yeah, about 65 million years ago when an asteroid hit.

Justin: Like, he's right though, that throws out the boat argument.

Laughter

Justin: If they're that sensitive.

Ryan: Everybody knows there's no overlap in dinosaurs and boats.

Patrick: Well, the other thing, I think most of these Highland lakes were created in the last ice age so, like a million years ago.

Ryan: So, its really only got a million years to evolve the ability to survive in fresh water not 65.

Patrick: Well, I, assuming it came from the ocean right before it went to Loch Ness. If it came out of another lake, I guess, maybe, who knows.

Justin: It would have had to survive in the ocean for the last 40, 50 million years and then get caught in the lake only recently.

Ryan: To be fair, it's a more plausible argument that it was surviving in the oceans and then moved.

Justin: Yeah, so maybe fresh water is just a recent adaptation.

Ryan: Which would explain why there are so many different lake monster sightings all around the world.

Patrick: Well, that and there hasn't been a lake monster movie in a few years. Yeah, so this is apparently the first credible sighting of Nessie in over a year now so I guess the sightings are getting more and more infrequent. Especially since Christian Spurling died right?

Ryan: Who's Christian Spurling?

Patrick: He's the guy who took probably the most famous Nessie photograph.

Ryan: Oh, the bathtub one?

Justin: That was like, last year right?

Patrick: Ah, it was, I think he died when I was an undergraduate. So he's been dead awhile but he confessed on his deathbed that he, he

Justin: Did it in the bathtub with a...

Patrick: Yeah

Justin: With a submarine and some clay.

Patrick: Yeah.

Justin: That's the famous photo of the grainy photo, the grainy black and white photo with the neck and the head...

Patrick: Exactly.

Justin: Wow.

Ryan: I can't believe people are actually amazed to see this. Now Patrick, when you had the Latitude/Longitude, did you get that from one of the articles you read?

Patrick: I did, yeah.

Ryan: Okay, because that was something that surprised me was I couldn't find any of the actual coordinates on any of the stories I looked at and I had to go find it myself.

Patrick: Oh so you...

Ryan: It took me two minutes to scan the Loch and find this thing. It's not an impressive feat, whoever this guy is who thinks that he has changed the world.

Patrick: Can you still find the flying car in Australia?

Ryan: Ah, Perth. Did they take that off? I had that bookmarked for awhile.

Patrick: I don't know.

Justin: Maybe the big story isn't really the Loch Ness monster thing but the fact that Google thought it was a big story.

Ryan: Well, I'm not sure that Google did. But...

Crosstalk

Justin: ...frightening down there, I mean, come on.

Patrick: Well yeah, I mean, come on that's... I mean, that's freakin, you know, this event aside, I can't imagine that those guys at Google weren't like, oh, yeah, that's a great idea, lets go try camp Loch Ness.

Ryan: Just get a free vacation out of it.

Justin: They ah, just wanted a vacation where they could sample some Scotch.

Patrick: Yeah, right. That's funny.

11:47

Music

Ryan: Okay, so the story with the UFOS is...

Patrick: Yeah, one government coverup to another, let's do it.

Ryan: We're in the UK.

Patrick: Okay.

Ryan: The study compiled UFO sightings around Britain for the past 50ish years and um, there was surprising correlations with UFO based movies. When a big movie came out UFO sightings would skyrocket.

Patrick: Yeah. I mean, I guess it's saying that when people have just seen a movie about UFOs they are more likely to see a UFO. Um, or they're excited about seeing a movie about UFOs.

Ryan: Right.

Justin: Or they see the movie and now they know what to look for.

Laughter.

Justin: I mean, it's just like, it's getting their search image, you geologists talk about this all the time, right? I mean, there's this rock, you see one and then you see a million of them, so...

Patrick: Yeah, it's like learning a new word, you hear it all the time.

Ryan: When you learn a new word you start hearing it all the time.

Patrick: Exactly

Justin: They're all over the place, we just need to watch more movies.

Patrick: Well, I haven't read this article, I haven't, I certainly haven't looked at this study. You know, I'm a little, you can usually find patterns wherever you want to find them especially when you've got something as loosely defined as, say, a popular movie with a UFO in it or a popular TV show with a UFO in it. I mean. You know, there's always movies coming out with space ships in them, I don't know how you can actually pin down specific, how specific movies are going to be more influential than others.

Justin: Well, because specific movies are more popular than others. *Close Encounters of the Third Kind* is more popular than *This Island Earth*.

Patrick: So I think...

Laughter.

Patrick: I just watched *This Island Earth*.

Ryan: Isn't that a terrible movie?

Patrick: I watched it on *Mystery Science Theater 3000*.

Justin: Oh, that makes it okay.

Ryan: Mike broke the Hubble, Mike broke the Hubble.

Patrick: Yeah, so...

Justin: Well, I think what they really need to do is, what is it when you, ah, look at shapes... is it finite definite analysis or something like that where you look at, ah, morphology?

Patrick: I think they call that finite element analysis.

Justin: Okay, yeah, so, they should ah, you know, see what people, because often people make these police reports, they draw things out, and they draw out the shape of the space ship and do a finite element analysis on these space ship shapes and compare them against an elemental analysis of shapes of spaceships from popular movies that came out at the same time.

Patrick: So, they actually something like that, I think. Like I said, I haven't read this article but from what I have heard, ah, they they compared alien, the way the aliens looked to the way that people described aliens and those things did, apparently, synch up pretty well.

Justin: So, these aren't UFO sightings, these are like, I met an alien.

Patrick: Well, I think it's all, I think they're all included. Any, you know...

Ryan: Well you were talking...

Patrick: Close encounters of the 1st, 2nd and 3rd kind Justin.

Ryan: Fourth, don't forget the abductions.

Justin: Oh, yeah. Well then you can get into the shape of the probes and all that stuff. Finer details.

Ryan: Yeah. Well, you were talking about the elemental shape analysis and that's one of the interesting things about the birth of the whole UFO sighting movement back in the 50s, was Kenneth Arnold, the pilot that first described seeing unidentified objects described them as boomerang shaped but moving through the air like a saucer skipping across a pond. And the reporter called them flying saucers and that is what other people reported seeing, was saucer shaped objects, even though Kenneth Arnold hadn't reported seeing that shaped object. And it just, it reads much more like a cultural phenomenon than an actual scientific phenomenon.

Patrick: Right, well, which, you know, it probably is.

Laughter.

Ryan: So, this one needs even less defeating than Nessie?

Patrick: Well, you know, I don't know, but maybe this explains why there haven't been many credible sightings of Nessie lately. Because there's been no singular...

Ryan: Pop culture...

Patrick: Yeah, I think Jaws might account for this, you know. Anything in the water that's going to like take you down and eat you or part of you or whatever, we haven't had one of those movies in a little while.

Ryan: True.

Justin: I think those are harder to disprove than ah, you know, Loch Ness monster sightings though because I think space is just a lot bigger than Loch Ness.

Ryan: Yeah, yeah. Right.

Justin: It's like, 2 miles wide.

Ryan: Yeah, but Justin, water is really murky so there could be...

16:45

Laughter

Ryan: And it...

Justin: Okay, I'm convinced...

Ryan: And it's really deep, actually. It's the largest loch in Scotland, by volume I think.

Justin: So, what is the largest loch in Scotland mean?

Patrick: It has the most water in it.

Ryan: It's the second largest.

Justin: But how does that compare.

Patrick: No, it's the second largest surface area. It has, actually, the most water in it. It's deeper than the others

Justin: I guess my comparative loch, ah, comparative loch is unable to make that connection. Does that mean it's really big or when you compare it against, like, you know, the Great Lakes, how they...

Patrick: It's no Great Lake.

Ryan: Yeah, it's no Great Lake. Great Britain isn't a Great Lake. Average depth of Loch Ness is 132 meters which is 430 feet and the maximum depth is 230 meters which is 754 feet.

Justin: That's pretty deep.

Ryan: That's pretty deep.

Patrick: Yeah, I buy it.

Patrick: I think, you could put a monster in there, I've read that the fishing stocks couldn't support a real predator, like that.

Justin: Huh. It eats fish.

Patrick: I assume it eats fish and not Scots. Right.

Ryan: Well, we know Elasmosaurus were probably fish eaters just based on the dentition, right?

Patrick: Yeah.

Ryan: So, unless, were there...

Patrick: And the fact that they had small heads and lived in the ocean.

Ryan: Right and long necks and, I mean, were there Plesiosaurs that have teeth that don't look like they would eat fish? Because that would...

Patrick: Well, there's Plesiosaurs with big, bigger heads, right.

Justin: Yeah, but that was like a 100 million years ago.

Patrick: Yeah, that could have changed.

Ryan: Could have changed.

Laughter.

Patrick: Yeah, that's true.

Ryan: Well Justin

Justin: If anything's changed...

Ryan: You know, if we evolved from monkeys why are there still monkeys?

Laughter.

Patrick: That was a lot more recent.

Ryan: Think about that!

Music

Announcer: Hey ya'll, it's trailer trash talk.

Ryan: So, lots of podcasts out there, I'm sure, review movies but I doubt that very many of them review trailers. So that seemed like a niche for us to exploit. And we have just the man to do it. Senior trailer...

Justin: Well, you're right in saying that very few ah, websites or podcasts review trailers at all. Ah, very few indeed. Um...

Ryan: Making that claim is going to get us email about how we're wrong.

Patrick: We probably are wrong. Did you search this out at all Justin? Do you have any...

Justin: Yeah, I've been looking around, I haven't seen, actually there's a really cool website about trailer music. Because, you know, you listen to a trailer and you go, ah what's that music from, what's the soundtrack. Ah, I think it's trailersoundtracks.com or, if you just google trailer soundtracks you can find it.

Ryan: I found a review that, um, that reviews, or I found a website that reviews RVs so, like, a tractor trailer.

Justin: Oh.

Laughter.

Patrick: Yeah. I don't doubt that you're going to have, yeah, be able to find some of those...

Justin: But listen, you know, being a graduate student, you know, you've got to find ways to procrastinate. What better way to go onto Apple.com and look at their trailers...

Ryan: And seeing a trailer is cheaper than going to a movie.

Patrick: And they're better, usually.

Laughter.

Justin: That's the thing. Usually they're better. So, but anyway, there's a good trailer out there, recently, put on a website by Apple, called, *The Men Who Stare at Goats*. Um, it's actually based on a book by Jon Ronson. And it stars ah, Ewan McGregor, George Clooney, Kevin Spacey, Jeff Bridges, ah, the list goes on. Actually... um,

Patrick: Like the cast

Justin: Yeah, yeah. A pretty good cast. It comes out November 6th. Ah, I like this trailer.

Ryan: Yeah?

Justin: Yeah, I thought it was pretty funny. So, it's...

Ryan: So, what's the premise.

Justin: Yeah, the plot is about, well, the top-secret wing of the U.S. military training intelligence officers in the ways of, ah ESP or Extra Sensory Perception. All this other stuff... They call themselves the Jedis. Jedi warriors, yeah...

Ryan: Not even Jedi knights but Jedi warriors.

Justin: Apparently this was a real program initiated by the military in order to train people...

Ryan: What decade was this? That this happened supposedly? 60s I think? Jeff Bridges is dressed like a hippy so I'm thinking 60s.

Patrick: Being in Santa Cruz...

Ryan: Well, sometimes, the 60s did end in Washington, so.

Laughter

Ryan: Maybe not in Santa Cruz but it's over there.

21:35

Justin: From what I could pick up from the trailer Ewan McGregor plays like a reporter or a, yeah, a reporter who goes out and hears about these people and doesn't believe its true. Then finds out its true and they actually go on a, some kind of crazy mission where they use their Jedi powers or lack there of.

Ryan: Yeah, I'm really wondering if they're going to play all this off as coincidence or if they're actually going to portray it as these guys actually had psychic powers.

Patrick: Yeah, I don't know. I'll tell you what I am excited about though is the, is George Clooney in another idiot role. The Cohen brothers movies... is a Cohen involved in this one Justin?

Justin: Ah, it doesn't look like it is. It's directed by Grant Heslov.

Patrick: By who?

Justin: Grant Heslov.

Patrick: Grant Heslov. Right on, so, maybe this is a good time to...

Laughter

Ryan: Sorry, I'm watching the trailer. I was watching it in the background...

Justin: So, this guy, this guy has an interesting credit list. The guy, Grant Heslov who directs the movie, he's directed um, ah, his acting credits... *True Lies*, *Dante's Peak*, *Enemy of the State*, and *The Scorpion King*. If you can imagine a range of movies that have such a large range in quality. I can't think of any.

Laughter

Patrick: I don't know, I liked *True Lies*.

Justin: I liked *True Lies*, I did not like *The Scorpion King*.

Ryan: *The Scorpion King* wasn't...

Patrick: I missed that one.

Justin: It's the range in quality.

Ryan: So, are we going to delve into the Hollywood Exchange now?

Patrick: Oh, we can. So, ah, one thing that we'll be checking in periodically with this podcast is the Hollywood Stock Exchange. You can find that at hsxx.com. And the Hollywood Stock Exchange is a marketplace where you'd buy and sell movies and stars that appear in movies. And ah, the marketplace, you sign up for a free account and they start you with two million Hollywood Stock Exchange dollars and you invest them however you want. Ah, and, the price, so you buy a movie say, that's going to come out in a few months and that, the price of that...

Justin: This is an entirely realistic scenario.

Patrick: Yeah, well, you know, you buy a share of this movie and the price of that share fluctuates depending on how people feel that movie is going to do at the box office. So, it has nothing to do with the quality of a movie. It just has to do with the potential box office take of a movie. And so this price will fluctuate until it, well, it will fluctuate up until about the movie's been out in broad release for four weeks and at that point a price will be locked in based upon the box office take. So, we are planning on participating in this exchange, based on the trailers and possibly the movies that we

review. So, I guess this would be the time to review this weeks trailer. What do you guys give it? Thumbs up, thumbs down?

Justin: I give it a thumbs up.

Ryan: Definite thumbs up.

Patrick: Yeah, I liked it too so I guess we'll be buying that one long rather than shorting it which is what I guess we'd do if we thought it sucked.

Ryan: What is, why would we buy it at all if we thought it sucked? I'm confused.

Patrick: Well, if you think it sucks you can short the stock and then when the price goes down you'd make money.

Ryan: Oh, okay. I don't understand stocks. That's my broker's job, to figure out for me.

Laughter.

Patrick: So, I figure we're going to have a weak portfolio or at least a thin portfolio if we're only reviewing, if we're only putting in that portfolio stocks or movies we review on the podcast so I figure we should both long and short these stocks rather than just not buying them if we don't like them.

Ryan: Okay, that's fair.

Justin: There are a lot of trailers out there.

Ryan: Yeah, here are a lot of trailers but there's only one show a week.

Justin: Yeah, and you also want to make clear that we're basing these stock options on our, just voting for the trailers, not the actual movies.

Patrick: Right.

Ryan: We'll report back in once the movie's out.

Justin: Yeah.

Patrick: Yeah, and you can find us and join us our league on the Hollywood Stock Exchange. So, if you go to leagues and you look for Science... sort of, that's our league and you'll find a Science... sort of account there and, I think you can be a part of multiple leagues so there's no point not joining our league, so, if you hear this and think it sounds like a good idea come join the Science... sort of team.

Ryan: What a passive aggressive pitch.

Justin: So, Patrick, can you actually make money off of this ah, thing? I mean, what's the incentive here?

26:26

Patrick: Ah, well, it turns out, for markets to be accurate you don't need much of an incentive so fake money is actually probably enough of an incentive for this market to work. And apparently, the Hollywood Stock Exchange is probably the best indicator of how a movie is going to do the day before it comes out. So, the Hollywood Stock Exchange is, from what I've read, and this is not reading it off the Hollywood Exchange site, but from independent places, say that the Hollywood Stock Exchange is the best predictor of how a movie is going to do opening weekend, more than anything.

Ryan: Huh.

Justin: Is this that concept, the ah, wisdom of crowds kind of thing, in action?

Patrick: Yeah, exactly. So, if you get a bunch of people together without them talking to each other and they all, sort of vote on their opinion. And it works even better if they, if there's a possibility of getting something out of, out of how you vote. So, there's a possibility of reward. Fake money, I guess, is enough of a reward.

Ryan: Like guessing the weight of a cow at a county fair.

Patrick: Yeah, or a, you know, this election, there's election futures now. So, you can't bet on the election but you can buy futures on which president you think is going to, which presidential candidate you think is going to win. And this is done in Iowa, mostly, I think. Maybe out of the

University of Iowa, possibly, although I'll have to double check that. But, they've done well in predicting the last, you know, it's not that amazing that they've been able to predict it but...

Justin: Also up that has nothing to do with, the wisdom of crowds has nothing to do with ah, healthcare, townhall meetings.

Patrick: I think that's why we're doing the Hollywood Stock Exchange instead of, you know, buying healthcare mutual funds I guess.

Laughter

Ryan: Well...

Justin: I guess, maybe less of a biased crowd, too.

Patrick: Possibly, yes.

Music

Ryan: Um, so do we want to talk about hybrid vigor at all, this podcast?

Justin: Hybrid what?

Ryan: Hybrid vigor. Like, ligers and trions.

Justin: And lesbian lizards.

Patrick: Sounds like you know a lot about it Ryan, why don't you tell us.

Ryan: Ah, well, you were the one that wanted to talk about ligers earlier. A 900 lb Liger.

Justin: Yeah, yeah, if you go on YouTube and search for liger you definitely find a video of a 900 lb liger and I think that's a female lion with a male tiger crossbreed.

Ryan: I think so.

Justin: But, you get, like, the opposite if you cross a male lion with a female tiger, right.

Patrick: You get a tigon.

Justin: A tigon which are not...

Ryan: Tigon... They're not? Why not? Why wouldn't the hybrid vigor effect be the same on either?

Justin: It's not symmetric.

Patrick: Oh. You get the same thing with the horse and ah, a horse and a donkey, is that where they make a mule?

Crosstalk

Ryan: I think the mule specifically has one parent, yeah, a mule is specifically a female horse and a male donkey.

Patrick: Right, you get a...

Justin: In the reverse what do you get.

Patrick: You get a henny.

Justin: Henny, okay.

Ryan: Yes. And the mule is easier to obtain than a henny, apparently.

Justin: So this, this is not symmetric, ah, hybrid vigor.

Patrick: Yeah, I guess not.

Ryan: So, you're saying a human male with a female chimp would be different than a female human with a male chimp?

Justin: Well, and that's obvious if you've ever seen Planet of the Apes. There's different things going on. I think this is a direct response to that.

Ryan: Huh.

Justin: Or not.

Patrick: Well, it could be, well, is that really what hybrid, maybe I misinterpreted hybrid vigor. I assumed we were going to touch on the fact that all these hybrids are sterile after...

Justin: Oh, yeah, there is that.

Ryan: There is that.

Justin: But if they're 900 lbs, I mean, come on.

Ryan: Who cares? Well, that's like the argument where you know, Superman has a kid with Lois Lane, the kid would have potentially have the power of Superman but probably also be sterile, right?

Patrick: Well, I guess so. Maybe we need the... and that didn't work out, right? Does he have a kid with Lois Lane or, that's never ending.

Ryan: In the movies he has a kid with Lois Lane. Never in the...

Justin: He's not going to have DNA is he?

Ryan: Yes, he does have DNA. When he died they took a sample. I'm completely showing my dork cred right now. But yeah, they took a sample of his DNA.

Patrick: - when we started this podcast you were in the clear.

Justin: Maybe this is in the Star Trek universe where the universe is initially seeded with the same organism, right?

Patrick: Well, I mean like, it's Superman. Would you be able to pass as Clark Kent if you, I mean, come on.

Ryan: Well, Just because you have two organism that physically look similar doesn't mean they have anything genetically in common. I mean, a marsupial lion and a regular lion look similar but have completely incompatible DNA.

31:31

Justin: Yeah, and if you're photosynthetic like Superman, I mean, like, if you're getting your power from the sun.

Ryan: Is he technically photosynthetic or is he like photovoltaic?

Justin: I think, ah, I mean, he synthesizes his energy and materials from the sun, right?

Ryan: But he doesn't use that precise chemical reaction to do that. He just gets raw solar...

Justin: ...waste of chemical reactions.

Ryan: Yeah, but he, he just takes raw solar energy. He doesn't have , he doesn't have to ingest any chemicals to make that process work. He doesn't need to breath, or he doesn't need to eat sugar water or anything like that.

Justin: Hmmm.

Patrick: Doesn't need carbon dioxide and an electron.

Ryan: I don't think so.

Justin: I don't think he's photovoltaic unless he uses electricity from the sun though.

Ryan: Because he can fly, well, he produces heat vision.

Justin: Yeah, but that's not electricity.

Ryan: He can fly, directly, and also the level of power he gets is dependent on the age of the star. So, a younger star gives him more power than an older star which is why no one on the planet Krypton had those powers because they were orbiting a red giant.

Justin: See, I'm going to side with photosynthesis on this one. I think photovoltaics.

Ryan: ...photosynthesis...

Justin: Well, I think it's closer to photosynthesis than photovoltaics because I think that you have to actually have electricity being, you know, synthesized.

Ryan: It's not like Superman has roots.

Patrick: No, no roots. Except in Smallville.

Justin: I think, actually, photovoltaics is photosynthesis too. Just the transport of electrons, right? That's what photosynthesis does.

Patrick: I'm a little unclear on the difference here.

Ryan: Wouldn't he be, wouldn't he have...

Patrick: No, here's the difference, here's the difference, right. You don't have to be able to build, you're constructing your skeleton and your tissue out of sunlight, right? That's the photosynthetic. Superman doesn't do that, right? He would have grown to full size on his home planet, right?

Ryan: Yes, yes he would have.

Patrick: So, I think he's not photosynthetic.

Ryan: His home planet, also, was bigger so, so the gravity was more intense.

Justin: He's got to ingest some kind of matter because sunlight itself isn't give you, it will give you the energy but not the matter than you need to build.

Ryan: Every comic I've ever read he eats because it's convenient.

Patrick: Plants don't get their matter from sunlight. They get their matter from air.

Justin: That's what I mean. Superman's got to get his matter from somewhere else too.

Patrick: Yeah, so you're going with photosynthetic.

Justin: Yeah.

Ryan: Let's see, if he was converting

Patrick: I think that's wrong. That is definitely wrong because photosynthetic plants, if you put them in the dark they die. Superman's not going to die if you put him in a dungeon.

Ryan: He just runs out of energy and becomes human. Which I think is patently ridiculous.

Patrick: Which doesn't even seem to be the case.

Justin: I mean, he goes into sporeform right.

Ryan: Well, he's a battery so he's got a charge built up so at night he can still operate but if he exerts himself for a long enough period of time without a recharge from sunlight he will, his powers will fade and eventually he will just be human. He won't die but he'll just be human.

Justin: Does he have to eat then?

Ryan: I don't know.

Patrick: He doesn't have to eat.

Ryan: What annoys me, what are the odds, in the whole Universe, what are the odds that when he loses his powers he's exactly human? How did that happen? Shouldn't he still, because Krypton was huge and even though he didn't grow up on Krypton that's where his genetics are coming from and that was a bigger planet than Earth so even without his powers he should still be stronger and tougher than a normal human and not like stubbing his toe on the desk which is the old trope that whenever he loses his powers he stubs his toe and is like, (gasp) "I'm human!"

Justin: Well, luckily creating backstories to characters you've already invented is 20/20 vision you know.

Ryan: Uhhuh.

Patrick: Well, so, ah, so, wait a minute. Superman's son did or did not have super powers?

Ryan: In the movie he has super powers at a much...

Patrick: Oh, he does.

Ryan: ...younger age than Superman himself. There's also several clones of Superman that also have powers. There's a half human, half Kryptonian clone Superboy that has...

Justin: Well, how cool would it be to have a liger with super powers.

Ryan: I mean, isn't being a liger already kind of a superpower?

Justin: Apparently, I mean, you're still not very vigorous but, ah...

Patrick: No.

Ryan: But that's the age old question right there. I mean, would you give up your ability to produce children for half of Superman's powers?

Patrick: Ah, for half of Superman's powers?

Ryan: Well, assuming your half human, you know, you're his kid.

Patrick: Right.

Ryan: You get Superman as a dad. Half of his power and yet you are sterile. Is that worth trading? Your virility for...

Justin: I'd go for it. I mean, the world's full of people anyway.

36:31

Patrick: Well, I mean, none of us have any kids yet so we probably all go for it.

Justin: Yeah, wait till we have kids then we will very willingly trade them in for super powers.

Laughter.

Ryan: It will become even more...

Justin: It's like, ah, yeah.

Patrick: Could well be, huh?

Justin: Patrick, we'll get back to you in a couple months.

Patrick: Yeah.

Ryan: A couple months? A month.

Patrick: Nah, it's two months. It's two months from yesterday.

Ryan: Oh wow.

Patrick: Yeah Ryan, you're...

Ryan: Sorry. I have, I have at least three or four other friends who have September babies on the way, so, I've gotten confused.

Patrick: Oh yeah?

Ryan: I've gotten very confused. Yeah, confused on who's being born when and what I have to do.

Patrick: Yeah, so, yes, go ahead...

Ryan: I was going to say, should we talk about lesbian lizards?

Patrick: Oh, the lesbian lizards. That's where I was headed, yes. Hybridizing doesn't work so well for mammals, right?

Ryan: Right.

Patrick: At least not if you want, not if you want to reproduce. But, lots, well, there are several genus, genera of lizards that can reproduce asexually if they need to. And at least the indochinese lizard, the Alepus, is the genus name, so the Alepus reproduces asexually and a number of species reproduce asexually.

Justin: So, do they get superpowers? Do they get heavier or...

Ryan: Wait, where does the lesbian angle come in Justin, is the appropriate question.

Patrick: So, lesbian lizards are more, nematophorus, that's the whip-tail lizards, some of those are in North America, Central America, maybe South America, I don't know. But those, actually, so, they reproduce asexually but they still sort of go through the motions of copulating to stimulate the hormones they need.

Ryan: Right, how I understood it was the female wouldn't ovulate without the stimulation.

Patrick: Yeah, that could be. I don't know the exact mechanism but something along those lines.

Ryan: Right, so she needs. She needs some sort of sexual stimulation in order to be able to ovulate and lay eggs and the eggs will hatch and be perfect asexual clones of her but she can't lay them without some other lizard getting up in her business.

Justin: I'm going to ask again, do they have any cool superpowers?

Ryan: Um, the superpower to...

Patrick: They clone themselves

Ryan: Yah.

Justin: That's pretty cool but, I mean, so, with mammals it's obvious you give up your ability to reproduce for superpowers. Like...

Patrick: Like muleness.

Justin: Yeah, like muleness, like, you can be really stubborn.

Ryan: The power of mule!

Justin: The power of mule.

Patrick: You might be thinking of a donkey.

Justin: Um, but with a liger it's obvious, you know. It's huge, it's like a Pleistocene monster, right.

Patrick: I think you're thinking of Nessie.

Ryan: It's a Cretaceous monster.

Justin: I'm just saying, it sounds like the mammalian hybrid, or, hybridity, or whatever you call it.

Ryan: Hybridization.

Justin: Hybridization, yeah, it sounds ah, more entertaining than, though, lesbian lizards, that's pretty...

Patrick: Well, the cool thing about these, Indopacific ones, oh, sorry, Indochinese lizards is that, um, I recently saw a talk at the ah, let's see, the Joint meeting of Ichthyologists and Herpetologists. Ah, so this talk was by Jesse Grismer and he was talking about how these lizards, he was doing, sort of genetic relatedness amongst these lizards and what was really interesting was depending on if he looked at the mitochondrial DNA or sort of the bulk of the DNA he would see these lizards fall out on different parts of the trees and both of them were right. Right, so these, these were hybrid lizards so he would have one branch of the tree, the father was from and that's where you know, most of the DNA would come from in the situation and then he'd have, it would hybridize with the female lizard from another part of the tree, the mitochondrial DNA would come from that portion. Because you always get your mitochondrial DNA from your mother. So, they could plot out two different places on the tree and they'd both be right. And so, instead of just being a sterile hybrid, once this lizard can't find anyone to mate with it just starts cloning itself .

Justin: Now, that is cool. Hands down.

Ryan: Yeah, but it's not self sustaining, right? Because of the Muller's ratchet.

Justin: Well, that's only if it's competing ah, other, ah... oh, I think it is sustaining.

Ryan: The Muller's ratchet has nothing to do with interspecies competition. Muller's ratchet is just the accumulation of the mutations in the line since you're cloning yourself every time you don't get the benefit of sexual recombination and eventually...

41:31

Justin: I understand that but you have lots of different lineages that are competing.

Ryan: Our listeners might not understand it.

Justin: You have lots, if you have an animal that's cloning itself and you have a whole population of animals that are cloning themselves and scattered all over the place then the ones that begin accumulating bad stuff are going to, you know, die off first. And the ones that don't accumulate the bad stuff are, or accumulate it at a similar rate are going to survive.

Ryan: But eventually everyone's going to accumulate some bad stuff.

Patrick: Yeah, and actually some of these lizards, some of these hybridized populations had um, had paternal, or had paternal lines that had gone extinct so clearly that was, that is not the case there. The hybridized cloning lineage had outlived one of its sexually reproducing lineages.

Justin: So, once they clone for awhile, can they go back? Can they switch back and reproduce normally?

Patrick: Well, sort of. So, normally you find a lizard population, will be haploid, ah, these hybridized lizards are diploid and occasionally you find hybridized lizard that is triploid and that is a case of having a diploid population, so, one that's already cloning itself and it mates, it finds another lineage it can reproduce with and so the result is another hybrid that goes on to sexually, or asexually reproduce, or clone itself, and then you wind up with triploid lizard populations that have twice been able to sexually reproduce in their past.

Justin: Right.

Patrick: So, it's pretty wild.

Justin: It seems like you'd want to be able to do, is, you know, you want to be able to do both. Right, you want...

Patrick: Yeah, yeah. I guess...

Justin: Well, you know, when you've got lots of mates around then you can go with that option and when you don't then you can amuse yourself for awhile.

Patrick: Yeah.

Ryan: No you can't amuse yourself. It's not a masterbatorial response, it's a homosexual response.

Justin: Is it homosexual to clone yourself?

Ryan: Well, it's homosexual to need something of the same sex to stimulate your cloning.

Patrick: Well, that's just the whiptail lizard. I'm not sure that these Indochinese ones do that.

Ryan: But that's more interesting.

Justin: That is an interesting concept...

Ryan: It would also have been...

Justin: ... homosexual.

Patrick: It would also have been way better to put this in Jurassic Park rather than frog DNA, right?

Ryan: That's true. To have dinosaurs...

Patrick: Exactly. Lesbian dinosaurs and that DNA would have made a lot more sense than frog DNA anyway.

Ryan: Well, bird DNA would have made the most sense.

Patrick: Yeah, but, okay, granted, but that clearly didn't, clearly did not go down that route. But this would have made more sense than frog DNA.

Ryan: Listen Patrick, Michael Crichton died and it's not good to speak ill of the dead. Just like he did of the dinosaurs.

Patrick: Yeah, right.

Ryan: Did anyone else find it, did you guys see all three Jurassic Park Movies?

Patrick: Ah, yeah.

Ryan: How

Justin: Unfortantely for...

Ryan: Exactly, in number three, how did the velociraptors suddenly have feathers? And how were they suddenly the appropriate size.

Justin: Well, I think just the young ones had feathers, right.

Patrick: That was site B right?

Ryan: Not velociraptors. I mean, velociraptors had feathers through adulthood. They found the um...

Patrick: I think, I think it was maybe supposed to show, oh, I don't know, just individual variation in the population.

Ryan: Right, but in the first...

Patrick: They didn't have a bunch of feathers did they? No, they just had a few...

Ryan: Yeah, but in the first movie they have no feathers and they're gigantic. They're not the size of an actual velociraptor. By the third movie they're an appropriate size and they've got feathers and are poorly computer generated and it was just bad comedy...

Patrick: Well, the third movie is a different director.

Justin: Well, you know, the third movie just sucked.

Ryan: That's true.

Patrick: I thought it was better than the second movie. I thought the second movie...

Ryan: Really?!

Justin: Really? But in the first movie the velociraptors aren't based on velociraptors, they're based on utahraptors which they discovered in time to come out in the scientific literature at the same time as the movie.

Ryan: I don't, I think utahraptors were even bigger than the velociraptors in the movie. I think the velociraptors in Jurassic Park were more deinonychus.

Justin: Ah, no, I'm pretty sure, well, we can figure this out real quick.

Ryan: It's a fact off.

Justin: This is Wolfram Alpha: let's see what Wolfram Alpha...

Ryan: I'm already at Wikipedia dude, you're taking to long.

Patrick: Oh good, things Wolfram Alpha can do.

Ryan: What can Wolfram Alpha do?

Justin: Okay.

Patrick: Yeah, tell us about this.

Justin: Utahraptor was 0.77 to 0.93 short tons and its length...

Ryan: I don't even know what that means.

Justin: was 19 to 22 feet.

Ryan: That's way bigger than the ones in Jurassic Park

Justin: 19 to 22 feet.

Ryan: They were not that big.

Justin: Utahraptor was like 700kilograms.

46:33

Ryan: That's way too big.

Patrick: Speak American.

Ryan: Yeah, speak American.

Justin: It's not giving me pounds

Ryan: Because with the deinonychus, the deinonychus was 11 feet long and that's a much more appropriate length.

Justin: So, again, 700kg, that's 1,500lbs, ah, but, I could totally see, ah some of those, some of those velociraptors being utahsaurus sized, or utahraptor sized.

Ryan: You bring up an interesting point with the ah, adolescence issue because in Jurassic Park they've only been cloning dinosaurs for a couple of years so how do they have full grow brachiosaurs?

Patrick: Yeah, thats...

Justin: Well, they had been cloning them for awhile by the time they open the... and actually they're cloning them on site b and then they're shipping them over to...

Ryan: But that's not the point. The point isn't where they're cloning them, the point is how long ago you have to clone them to have a full grow brachiosaurus before... because if you assume, you know, that the larger an animal is the longer it takes to reach sexual maturity, like elephants or something, take years and a brachiosaurus is orders of magnitude bigger than an elephant then how were they full grown by the time they were ready to open the park?

Justin: That's easy, you just change the metabolism gene.

Ryan: I think they talk about that in the book.

Justin: It's like a dial, you just go in and change the dial.

Ryan: You're ridiculous. I don't agree.

Justin: If you can clone a dinosaur then you can do that.

Ryan: I suppose.

Music

Patrick: Do you want to talk about the Marvel Disney deal quickly?

Ryan: Oh yeah, absolutely. So, the news hit the fan today that Disney is purchasing Marvel Comics Entertainment Group for \$4 billion.

Patrick: Nice. That's a lot of...

Ryan: It's been a...

Patrick: That's a lot of responsibility.

Ryan: That's a lot of power and a lot of responsibility. So, this has been all over Twitter all day. This podcast is going to be a little dated by the time it comes out but it's still worth discussing I think. So, what do you guys think? Do you have an opinion on this?

Justin: I'm curious to know if you think this is a good thing or a bad thing.

Ryan: I think it's a good thing.

Patrick: For Marvel, I think it's a good thing for Marvel.

Ryan: I think it's a good thing for Marvel in the same way being bought out by, having more Disney buyout Pixar was a good thing for Pixar. And I didn't think that but, um, to bring it all full circle I worked at a comic shop and this comic shop had been open for thirty years and the guy, the first customer, the first regular customer at this comic shop works now for Pixar. And he was, ah, the lighting director for the Incredibles and he did a bunch of other work with Pixar. And he was coming into the shop, I was working there while this deal was going down and I talked to him about it because I thought it was a bad idea and he explained it to me very simply that if you have Disney owning Pixar its good for Pixar because Pixar has their studios up in Emeryville and this way, their lawyers, their marketing, all that other stuff that's not creative is run by Disney. And that's a good

thing for them because that way all they have to focus on at Pixar Studios is making good movies and they don't have to worry about promotion. They don't have to worry about defending themselves legally. All they have to worry about is making good movies. And I'm hoping that's going to kind of be the same deal with Marvel. Is that, now Marvel doesn't have to worry about all that stuff. All they have to worry about is making good comics.

Justin: Ah, I see. So, Marvel will still be in charge of the comics side of things.

Ryan: I suspect that not a single thing will be noticeably different about Marvel comics. Because the thing is, DC is owned by Warner Brothers, um, and they still manage to put out good comics every week. It's not an issue and Marvel has, ah, DC, Warner Brothers has some control over that stuff, especially when it comes to animation or movies or merchandising but it doesn't really affect the comics thing. And comics don't make a lot of money, like, even before Marvel was bought out by Disney, Marvel's, the majority of its money came from licensing of properties. So, Spider-Man underwear, Fantastic Four lunch boxes, and Iron Man play sets, made up the majority of sales at Marvel, not comics. And comics were just kind of like the vanity project and the creative content creation engine for Marvel. The thing that I'm most interested in is that Marvel recently opened their own movie studio which is where the, the first movie that came out from there was Iron Man last year and previous to that they had been licensing all of their movie properties to other studios. So, X-Men and Spider-Man are both owned by Sony I think. And I'm interested to see what Disney does with that production studio and how that's going to affect upcoming movies like Ironman 2 and the Avengers movie and Thor and Captain America. That to me is where the biggest changes might be happening.

Justin: The licensing...

51:32

Patrick: Yeah, so I think this is probably not a bad deal for Marvel, assuming they don't get their...

Ryan: Everyone at Marvel is thrilled if you believe Twitter.

Patrick: Well, also because they, all their stock went up 25% today we just heard. But, for Disney I can't see how this is that great of a move.

Ryan: It's a great move because they get access to this gigantic creative machine. I mean, Marvel's nickname is the house of ideas because so many cool, new creative things come out of Marvel. And I mean, maybe not so much recently as in the 60s when you had, just characters, new ideas pouring

out of Marvel every month, you know, the Fantastic Four, The Hulk, the X-Men, Spider-Man, they're all coming out in less than a decade. I think that's what Disney is going for, they're just trying to get a bunch of creative people under their roof and working for them.

Justin: Long-term strategy for Marvel or...

Ryan: Totally.

Justin: For Disney, I mean, I don't know if they're going to be reaping the benefits of ah, some of these possible things that they're going to be able to do, you know, in the near future, but definitely long term, even after the movies that you mentioned that are already in development or at least in pre-production, ah, you know there's just so much content for them to pick and choose from afterwards.

Ryan: And I think that's going to be the biggest boon to Disney, is the content.

Justin: Yeah.

Patrick: I think the problem is, the content, you know, those characters you discussed already, you had Fantastic Four, you had Spider-Man, you had X-Men, like, those franchises in the theater have, maybe not completely run their course but, you know, a lot of money is gone there.

Justin: Yeah, but there's always room for re-invention. Like, the Batman movies. So, you make three or four Batman movies and, you know, you're done for a little while then somebody comes along and totally reinvents the franchise and bring people back into the theaters.

Crosstalk

Ryan: ...Incredible Hulk... they reinvented the Hulk movie within a couple of years of itself.

Patrick: Yeah, but how did that go?

Ryan: It went really well.

Justin: Not so good.

Ryan: Financially, for Marvel, that was great.

Patrick: Did it?

Ryan: Oh yeah.

Patrick: For me it didn't go so well.

Ryan: Really, you like the original Hulk better than the new Hulk?

Patrick: Oh, hell yeah.

Ryan: How is the, Ed Norton is the perfect person to play Bruce Banner. It's a no brainer.

Patrick: I own the original Hulk. I'm a big fan of Ang Lee's version of it but I realize I'm the minority.

Justin: I fell asleep.

Patrick: I can see, ah, franchises like Spider-Man being rebooted...

Ryan: Spider-Man's not owned by Marvel, that's the problem.

Patrick: Yeah, that's the problem. I mean, there's lots of licensing issues here and apparently the characters are licensed to Universal right now so Disney can't even use them in its own theme parks for I don't know how long. Universal's still going to have all the characters running around in Universal Studio's parks in Orlando and Los Angeles, I guess.

Ryan: That's going to confuse children and I'm against it. How will children learn about the marketing structure of the United States and corporate...

Patrick: It is going to be difficult.

Ryan: I know, I'm really upset right now.

Justin: Well, that's what Wolfram Alpha is there for.

Ryan: How will Wolfram Alpha help? Type in Marvel Wolfram Alpha and see if it gives you information on Disney.

Patrick: It probably gives you the stock. It will give you stock prices if you type in...

Patrick: Alright, I'm on Marvel Entertainment, the latest trade is \$48.33, the market cap is \$3.7 billion, 300 employees with a revenue of \$760 million. So...

Ryan: But most of that money comes from marketing. That employee count probably doesn't include freelancers.

Justin: Oh man, earlier today, look at this, so right now the ah....

Patrick: What, the stock went up 25% today? Is that what you're going to tell me?

Justin: Yeah, the latest trade was \$48

Patrick: That's what I just said earlier.

Ryan: He didn't believe you.

Justin: Well, no, I'm just looking at the numbers. It went up from like, \$38 to \$48, so...

Patrick: Yeah, and uh, Disney was down .80 or something, down 3% I think.

Ryan: I'm watching Twitter. Even the freelancers got a call from somebody at Marvel explaining that they're not out of a job, they're not going to get fired. So, it seems like this is a good thing for all the people that actually work for Marvel and it seems like the only people that are upset about this are annoying fanboys that can't deal with anything ever changing.

Music

Thanks for listening to Science... sort of. Our show notes are available at sciencesortof.wordpress.com which will have links to all the stories we talked about today. You can follow us on Twitter at twitter.com/sciencesortof. You can get in touch with us at sciencesortof@gmail.com or on our Facebook fan page. A great way you can support the show is by subscribing to our feed on iTunes and writing a review so other people have a better chance of finding the show. And, if you have a friend you think might be interested in it tell them to give us a try. That's all for this week, thanks for listening and see you next time on Science sort of.

Aftershow:

Crosstalk

Ryan: I will talk straight, where is the mic on my computer.

Patrick: I don't know.

Justin: That would be, that would be where you'd want to...

Ryan: I think that's where the mic is. I'm going to talk at that little dealy.

Justin. Thats' not especially good.