You're listening to Imaginary Worlds, a show about how we create them and why we suspend our disbelief, I'm Eric Molinsky.

CLIP: DARK KNIGHT RISES

In The Dark Knight Rises, Tom Hardy played the villain Bane. And for some reason, he did the voice as a cross between Sean Connery and Darth Vader. Given that the character is supposed to come from a fictional Latin American country, it was such a weird choice – it was actually kind of fascinating, and lead to all these great parodies.

CLIP: SOUTH PARK

But for all the buzz around the voice, I was surprised that no one talked about Bane's costume – which I thought was ingenious.

In the comics, Bane's costume looks like a Mexican wrestler. He's got a back hood over his face, with a white design that looks like a skull with red eyes. Bane's strength comes from tubes going into his back that pumps him up with liquid steroids. In fact, his shoulders are so bulked out -- the artists like to draw his head below his neck.

There's no way you could do a literal version of that without looking ridiculous. But that didn't stop Joel Schumacher in his 1997 catastrophe Batman and Robin.

CLIP: BANE!

Christopher Nolan's Batman took place a semi-realistic universe. So he and the costume designer Lindy Hemming turned Bane's liquid steroids into a gas that he inhales, which doesn't make him super strong, it dulls any physical pain. His breathing apparatus is the same shape as the design of the skull on his hood, but it's black instead of white. And he's not wearing a hood in the movie; instead the actor's baldhead is exposed. So if you squint, Bane's head looks like the same design as the comics, but it's the negative image.

They couldn't give him cartoonishly gigantic shoulders, so he wore a coat with a very high, wool collar that gave him the same silhouette the comics. It was a brilliant design solution.

CLIP: DARK KNIGHT RISES "Impossible!"

Superhero costumes used to be cringe-worthy. Even the good ones, like the 1989 Batman was so bulky, the actor couldn't turn his head or fight unless the bad guys ran right into his fists. So what happened? Why did they get so much better?

MW: I'm Michael Wilkinson and I design costumes for films.

Michael worked on Man of Steel, and Batman vs. Superman. He got a lot of heat for the new Bat suit because it looked like Ben Affleck was wearing a thick rubber cowl and wouldn't be able to turn his head – which would be like a step backwards. But newly released images show the Dark Knight turning his head to the camera.

MW: I feel like when the world has a really good look at the cowl that Ben wears. I hope people like it a lot of work into construction of that, there's all sorts of amazing things going on inside that cowl that make it easy to move in and have a full range of expressions.

Superhero costumes used to be just works of fashion with no function – even if they were designed by a genius like Edna Mode in The Incredibles.

CLIP: Bold! Something classic like Dyno Guy! No Capes!

One of the big changes is that costume designers are looking more closely at the source material. When Michael Wilkinson and his collaborator James Acheson worked on Man of Steel, they researched the history behind Superman's costume.

MW: The genesis of that idea was the circus performer, weight lifter, strong man in Victorian age in the early part of the 20th century had this look of wearing early wool jersey types with shorts over the top.

So Superman's suit was kind of a combination of the weightlifter and the ringmaster who wore boots and a cape. Also swashbuckling heroes like Zorro wore capes. So Michael and James thought – okay that still communicates strength, power, adventure. But:

JA: It became a kind of design problem how are we going to resolve those silly red underpants? So we went through dozens and dozens of drawings.

MW: There was lots of talk about the briefs and were we going to include, how brief would the briefs be, and they got smaller and smaller until they weren't there on the illustration and that was the look we decided to go with.

Sammy Sheldon Differ took the same approach with X-Men: First Class. In the previous movies, the X-Men wore wear black leather with the few distinguishing characteristics. The director of First Class told Sammy that he wanted to go back to the original comics, when the X-Men wore yellow and blue jumpsuits.

SSD: So given obviously it's a very simplistic drawing that was on first cover I started researching into period of the time, why they were drawn the way they were, what maybe the colors were representing. And what immediately came out was in 1963 DuPont discovered Kevlar, it felt to me that was what they were trying to represent in the comic. So we went down this route ... and what NASA was up to.

She pulled it off – the costumes looked very cool -- very '60s. But honoring the source material is a tricky thing.

SSD: Comic book illustrators – not that they don't understand they don't need to make a logic of the lines that they're drawing, where it goes front to back of the body, round over the shoulder, whatever looks cool and sells the dynamic of the character but when put that into reality, you got to follow the lines around the body 360.

And superheroes are wearing skintight clothes to show off their ridiculously well defined muscles, which for some reason look believable in the comics.

MW: One thing we discovered is that no matter what incredible shape an actor is in, once you put leotard on them everything is smoothed out, and all that fantastic definition they've been working so hard at is kind of negated.

The next leap away from cringe worthy costumes was texture.

Again, going back to the source material, comic books could only be printed in a few limited colors, so the costumes were usually just one, two or maybe three colors – which looked great, they leapt off the page. But for a movie like Man of Steel, once you get rid of Superman's red underpants

and the little yellow belt – his suit is very blue and that's boring to look at in HD.

So they created a silver layer that went under the blue, to give it a metallic quality. And they 3D printed texture to give it muscle definition, and create visual interest for cinematography. They even created a backstory to explain the texture. It was chainmail that went under the armor people wore on the planet Krypton.

Sammy Sheldon Differ likes is use another trick – mixing and matching materials on the same costume.

SSD: With the X-Men costumes they were layers and layer of fabric pieced together and connecting things one on top of the other, if you stand away they look quite blue with yellow bits, but if you go in close it's all intricately stitched to make it textured and leather pieces and the Kevlar in the middle.

JA: Part of design if it's going to be interesting is you have to take risks. And the thing about superheroes is it's a fabulous arena to take risks. The problem is these films cost a huge amount of money. You can take the risks but you better make sure come up with goods because it's an awfully expensive process to get it wrong.

Yeah, and a lot of angry fans who will let you know if they don't like it.

JA: Not so much the fans, it's the producers! (Laughs) Who are still waiting on the set saying, where is it?

Finally, it needs to move!

James Acheson had a devil of a time working on the first Spider-Man films. He spent three months making nearly 70 different versions of the suit – getting the colors right and making sure the textured webbing stayed on. When it was ready, they took it on a test run.

JA: We had a stunt man on a wire and they flew him straight into a tree and the whole suit, I mean half the webbing unglued from the suit, it was sort of like a terrible waffle hanging in the trees, it was a disaster!

It's funny – superheroes and supposed to seem indestructible, but these costumes are so fragile. So the solution is to create 20 or 30 different version of the costume, each one tailor made for the specific needs of that

scene. When Sammy Sheldon Differ worked on Marvel's Ant-Man, even that wasn't enough.

SSD: They want some one to turn over and over, I don't know what you call it, tumbling and they put in a rubber floor and they say he can't do it in those boots, and so you say okay, you have to whip up a pair of boots that look identical to the hero pair but almost like bare foot.

It's a grueling process but Michael Wilkinson says you need to take a step back and realize this is really a conversation that's happening among designers, across time.

MW: You know in Asian art over centuries take the figure of Buddha or something like that and over the centuries they are refining, they're putting their own stamp on these cultural figures, it's like that without making too grand with our superheroes because each iteration of a superhero, reflects a lot about the society in which the iteration was born.

He's been giving this a lot of thought because he designed the first movie version of Wonder Woman. Her suit, he says, will be in conversation with the other live action Wonder Woman – the one we know from the '70s.

MW: Wonder Woman is super close to my heart growing up. She was the one who captured my imagination in the strongest way.

Really, why?

MW: There's something about Linda Carter's performance, they really crossed into this magical world and I was fascinated by her back story, and I was lucky enough to work with Linda Carter on a film called Sky High where she played principal of a high school for superheroes, and so I had a seminal experience shopping with her on Rodeo Drive I'll never get over, it was very exciting.

What this all comes down to is costume designers are constantly asking themselves, "why?"

SSD: I don't think you can get away with a unitard with a funny helmet. I think you have to make sense of why is that person wearing that suit? What does he do with it? Does he have a power or is it something the suit gives him? And then those questions lead you on to, how does that work?

That's one of the reasons why I love the new Daredevil series on Netflix. The first season has separate episodes to answer those questions – why does he needs fighting sticks, why does he needs a padded suit, why does the suit have to be red, why does it have horns? The evolution of the costume became the story of a character realizing who he truly is. The costume is an expression of his real self, the one he has to dig down and find beneath the surface of his alter ego.

The best costume designers are storytellers, just like writers and directors. The fans will complain and nitpick but I think there are no wrong choices, so long as they make us believe something that's wonderful and ludicrous.

JA: I remember spending many, many nights in a loft in Manhattan trying to get the right color screen printed on those suits. New York is my favorite city in the world. Aw, I love New York too. It's funny, because of those Spider-Man films walk around NY and I live here 11 years, I look up and how great to see Spider Man swing those canyon of skyscrapers.

JA: Laughs, yeah.

Seriously, it kind of bums me out that we don't see him up there every so often going – *fttttp!*

Well, that's it for this week's show, thanks for listening. Special thanks to Michael Wilkinson, Sammy Sheldon and James Acheson. You can like the show on Facebook or leave a nice comment in iTunes. I tweet at emolinsky. The show's website is imaginary worlds podcast dot org.

INCREDIBLES CLIP