

053 - Is seeing believing? Deepfakes and the information apocalypse

Introduction and admin

Hi English learners! Lori here, your teacher from betteratenglish.com.

When you watch the news these days, do you trust your eyes and ears? Do you think what you're seeing is real and happened the way it is being shown? Or is your first reaction to think: Hmm, I wonder if this video is fake? That's what today's episode is about, so stay tuned.

Before we get started, I hope you'll indulge me in a little Better at English background info. I don't do Better at English for the money, but some of you have been going out of your way to send me thank you gifts. So thank you so much to Charles for his very generous Paypal donation, and to the mystery person who sent me the *Handbook of Self-Determination Research* from [my Amazon wish list](#). I honestly didn't know that it was even possible to find my Amazon wish list anymore, so getting a mystery book delivered was a real surprise! I'd also like to thank Zhuo Tao (I hope I'm saying that right) who wrote my favorite review this month: It goes like this *"This podcast is getting better and better by every episode. It's no longer just some language learning material, but food for thought as well."* That is indeed what I'm trying to do, so that was really nice to get that feedback.

All feedback from you lovely listeners, whether it's reviews, email, voice messages, donations, Amazon wish list gifts...it's all positive feedback that fuels my motivation to keep doing this...it's a sign that you're getting value from the episodes, which is what it's all about. So thank you!

OK, thank you for indulging me...let's get on with today's topic.

Deepfakes

Today we're looking at misinformation and disinformation in our modern age, and how technologies like **deepfake** are making it increasingly harder for us to know what is really happening in the world, to separate fact from fiction. This episode builds on my earlier episodes about AI—that's artificial intelligence—which you can find further down the podcast feed as episodes 47 and 48.

Before we go any further, take a moment to ask yourself how much you trust what you see, hear, and read these days, whether it's online, in a newspaper, or coming from an expert or politician in a live televised address. Is seeing believing, as the expression goes? Go ahead, think of some recent examples that are personally relevant to you. Now ask yourself how your beliefs about what is true influence your actions, how much they shape what you actually do as you move through life. How do these beliefs influence, for example, who you vote for, what you buy, what you eat, which books you read, which car you drive?

You don't need to be a Ph.D. in psychology to understand that our beliefs about what is true or false affect our actions. Nobody wants to make decisions based on lies or misinformation, so we all want information that we can trust. Just to give a current example, look at what's happening regarding masks and the Corona-virus. If you think masks do help stop the spread and protect others, you're likely to wear one even though they are

uncomfortable and it's kind of a pain in the butt. And if you think masks don't help at all, you are more likely to resist wearing a mask or even flat out refuse. I mean, why bother if they don't work, right? And if you have really strong beliefs about this, you might even march in protest against the rules that require you to wear a mask. The point is, your chosen path will be based on what you believe is right and true.

We are living in a pretty crazy time right now, and humanity is facing huge challenges. And it's no secret that many of the big issues are extremely **polarizing**. And if you try to build **an informed opinion** by examining the information and arguments of both sides, you make a frustrating discovery, or at least I did:

Both sides seem have completely different interpretations of facts and reality. And each side believes it sees things correctly and the other side is hallucinating. Or crazy. Or just plain evil.

To borrow an analogy from the author Scott Adams, it's as if we're all watching the same movie screen, but we're seeing two completely different movies at the same time. And each of us is convinced that our movie is the truth.

This "two movies on one screen" phenomenon is already happening with events that we all can agree really happened. We might not agree on what these events mean, who is responsible, what should be done about them etc., but we basically accept that they actually occurred in the physical world. Seeing is believing, right?

But what happens when the things we are seeing and hearing, the video, audio and photos are 100% fake? And what happens when these fakes are everywhere? If we can have such serious disagreements, such polarization about genuine, real events, what is going to happen when we truly can't be sure if the media we are seeing and hearing is real?

Some experts think that this is going to happen really soon. We are entering the era of deepfakes. If you're not sure what a deepfake is, you will understand it by the end of this episode.

You are going to hear experts discussing this topic in English, and I'll pop in from time to time to guide you through the examples.

The link to the full transcript of this episode is in the show notes, and there are also links to the audio you hear and the examples that the speakers mention, like videos, websites, books, etc. So if you find this topic interesting, there is plenty of supplementary material so you can learn more.

All right, let's get started. First of all, what is deepfake?

Nina

So a deep fake is a type of synthetic media. And what synthetic media essentially is, is any type of media, it can be an image, it can be a video, it can be a text, that is generated by AI.

Lori

That was Nina Schick, who is, to put it mildly, a pretty impressive woman with a very interesting background:

Nina

I'm half German, and I'm half Nepalese. And so I've this background in geopolitics, politics and information warfare. And my area of interest is really how the exponential changes in technology, and particularly in AI are rewriting not only politics, but society at large as well.

Lori

She's also proficient in 7 languages. All I can say is, wow. You'll now hear Nina talking to Sam Harris about deepfakes. It's from an episode of Sam Harris's podcast "Making Sense," which is another great podcast for you to add to your list of interesting podcasts in English. Here we go:

Sam

So much of this is a matter of our entertaining ourselves into a kind of collective madness, and what seems like it could be a coming social collapse, I realized that if you're not in touch with these trends, you know, if anyone in the audience who isn't this kind of language coming from me, or anyone else can sound hyperbolic. But we're really going over some kind of precipice here, with respect to our ability to understand what's going on in the world, and to converge on a common picture of a shared reality. [EDIT] And again, we built the the very tools of our derangement ourselves. And in particular, I'm talking about social media here. So your book goes into this. And it's organized around this, this new piece of technology that we call deepfakes. And the book is Deepfakes: The Coming Infocalypse, which umm, that's not your coinage, it...on the page is very easy to parse. When you say it, it's hard to understand what's being said there, but it's really, you're talking about an information apocalypse. Just remind people what deepfakes are, and suggest what's at stake here in terms of, of how difficult it could be to make sense of our world in the presence of this technology.

Nina

This ability of AI to generate fake or synthetic media is really, really nascent. We're only at the very, very beginning of the synthetic media revolution. It was only probably in about the last four or five years that this has been possible. And for the last two years that we've been seeing how the real world applications of this have been leaching out from beyond the AI research community. So the first thing to say about synthetic media is that it is completely going to transform how we perceive the world, because in future, all media is going to be synthetic, because it means that anybody can create content to a degree of fidelity that is only possible for Hollywood studios right now, right? And they can do this for little to no cost using apps or software, various interfaces, which will make it so accessible to, to anyone. And the reason why this is so interesting.

Nina

Another reason why synthetic media is so interesting is until now, the best kind of computer effects CGI, do you still can't quite get humans right. So when you use CGI to do effects where you're trying to create robotic humans, it still doesn't look right...it's called, you know, uncanny valley. But it turns out that AI when you train your machine learning systems with enough data, they're really really good at generating fake humans or synthetic humans, both in images, I mean, and when it comes to generating fake human faces, so images, still images, it's already perfected that and if you want to kind of test that you can go and look at

thispersondoesnotexist.com. Every time you refresh the page, you'll see a new human face that to the human eye, to you, or, or me, Sam, we'll look at that and we'll think that's an authentic human, whereas that is just something that's generated by AI. That human literally doesn't exist. And also now increasingly in other types of media like audio, and film. So I could take essentially a clip of a recording with you, Sam, and I could use that to train my machine learning system and then I can synthesize your voice so I can literally hijack your biometrics, I can take your voice, synthesize it, get my AI kind of machine learning system to recreate that. I can do the same with your digital likeness.

Obviously this is going to have tremendous commercial applications; entire industries are going to be transformed. For example, corporate communications, advertising, the future of all movies, video games. But this is also the most potent form of mis- and disinformation, which are democratizing for almost anyone in the world at a time when our information ecosystem has already become increasingly dangerous and corrupt. [Edit] So we have to distinguish between the legitimate use cases of synthetic media and how we draw the line. So I very broad brush in my book say that the use of and intent behind synthetic media really matters and how we define it. So I refer to deepfake, as when a piece of synthetic media is used as a piece of mis- or disinformation. And, you know, there is so much more that you could delve into there with regards to the kind of the ethical implications on the taxonomy. But broadly speaking, that's how I define it and that's my definition between synthetic media and deep fakes.

Sam

Hmm. Well, so umm, as you point out, all of this would be good, clean, fun if it weren't for the fact that we know there are people intent upon spreading misinformation and disinformation and doing it with a truly sinister political purpose. I mean, not not just for amusement, although that can be harmful enough. It's it's something that state actors and people internal to various states are going to leverage to further divide society from itself and increase political polarization. But it would, it's amazing that it is so promising in the fun department that we can't possibly even contemplate putting this cat back in the bag. I mean, it's just, that's the problem we're seeing on all fronts. It is, so it is with social media. So it is with the, the ad revenue model that is selecting for so many of its harmful effects. I mean, we just can't break the spell wherein people want the cheapest, most fun media, and they want it endlessly.

And yet the, the harms that are accruing, are so large that it's, it's amazing. Just to see that there is just no there's no handhold here, whereby we can resist our slide toward the precipice. Just to underscore how quickly this technology is developing. In your book, you point out what happened with the...once Martin Scorsese released his film, The Irishman which had this exceedingly expensive, and laborious process of trying to DE-age its principal actors, Robert de Niro and Joe Pesci. And that was met with something like derision for the the imperfection of what was achieved there -- again, at great cost. And then very, very quickly, someone on YouTube, using free software, did a nearly perfect de-aging of the same film. [You can see it here: https://www.youtube.com/watch?v=dHSTWepkp_M] It's just amazing what what's happening here. And, again, these tools are going to be free, right? I mean, they're already free and and ultimately, the best tools will be free.

Nina

Absolutely. So you already have various kind of software platforms online. And so the barriers to entry have come down tremendously. Right now, if you wanted to make a convincing deepfake video, you would still need to have some knowledge, some knowledge of machine learning, but you wouldn't have to be an AI expert by any means. But already now we have apps that allow people to do certain things like swap their faces into scenes, for example, Reface I don't know if you've come across that app. I don't know how old your children are. But if you have a teenager you've probably come across it. You can basically put your own face into a popular scene from a film like Titanic or something. This is using the power of synthetic media. But experts who I speak to on the generation side -- because it's so hugely exciting to people who are generating synthetic media -- think that by the end of the decade, any YouTuber, any teenager, will have the ability to create special effects in film that are better than anything a Hollywood studio can do now. And that's really why I put that anecdote about the Irishman into the book because it just demonstrates the power of synthetic media. I mean, Scorsese was working on this project from 2015. He filmed with a special three-rig camera, he had this best special effects artists, post production work, multi-million dollar budget, and still the effect at the end wasn't that convincing. It didn't look quite right. And now one YouTuber, free software, takes a clip from Scorsese's film in 2020. So Scorsese's film came out in 2019. This year, he can already create something that's far more...when you look at it...looks far more realistic than what Scorsese did. This is just in the realm of video. As I already mentioned, with images, it can already do it perfectly. There is also the case of audio. There is another YouTuber, for example, who makes a lot of the kind of early pieces of synthetic media have sprung up on YouTube. There's a YouTuber called Vocal Synthesis, who uses an open sourced AI model to train a...trained on celebrities voices

Lori

Hello again...before we go on, let's listen to a couple of examples from the [Vocal Synthesis Youtube channel](#). You'll hear Donald Trump doing a dialog from the Star Wars franchise, and 6 presidents reading the introduction to the classic TV series, Twilight Zone. I have to say, these examples freaked me out when I heard them.

[Donald Trump reads the Darth Plagueis cospasta](#) <https://www.youtube.com/watch?v=LEzIAixNkFI>

The dark side of the force is a pathway to many abilities some consider to be unnatural. He became so powerful...the only thing he was afraid of was losing his power, which of course he did.

[6 presidents speak the Twilight zone intro](#) <https://www.youtube.com/watch?v=B2HIDk-u1hQ>

Barack Obama: There is a fifth dimension beyond that which is known to man.

John F. Kennedy: It is a dimension as vast as space, and as timeless as infinity.

Bill Clinton: It is the middle ground between light and shadow, between science and superstition.

Ronald Reagan: And it lies between the pit of man's fears and the summit of his knowledge.

Donald Trump: This is the dimension of imagination.

Franklin Roosevelt: It is an area which we call the Vocal Synthesis YouTube Channel.

As a native speaker, I can hear signs that these examples are computer generated...what did you think?

Remember, this is just some random YouTuber, and this is still a nascent technology, a new technology. It's already pretty impressive, but will only get better in the years to come. Now back to Sam and Nina. Now Nina continues talking about the Vocal Synthesis Youtube channel.

...trained on celebrities' voices...so he can...something that he's done that's gotten many, many views on YouTube is he's literally taken audio clips of dead presidents and then made them rap NWA's Fuck the Police. Right? Ronald Reagan and FDR.

Note: These videos seem to have been removed. But here is one of [six presidents reading F*ck the Police](https://www.youtube.com/watch?v=mAZVp-n-5TM) - (vulgar, not safe for work) <https://www.youtube.com/watch?v=mAZVp-n-5TM>

Nina

He...very interesting...this is an indicator of how complex these challenges are going to be to navigate in future because another thing that he did was he took Jay Z's voice and made him rap recite Shakespeare's "To be or not to be" and interestingly, Jay Z's record label filed a copyright infringement claim against him and made him kind of take it down.

Note: It seems this video has been posted again: <https://www.youtube.com/watch?v=m7u-y9oqUSw>

Nina

But this is really just a forebear of the kind of battles we're going to see when any anonymous user...this is...can take your likeness, can take your biometrics and make you say or do things that you never did. And of course, this is disastrous to any liberal democratic model. Because in a world where anything can be faked, everyone becomes a target. But even more than that, if anything can be faked, including evidence that we today see as an extension of our own reality, and I say evidence in quotation marks, video, film, audio, then everything can also be denied. So the very basis of what is reality starts to become corroded. Of course, reality itself remains. It's just that our perception of reality starts to become increasingly clouded.

This brings up a very interesting point. There seem to be three main types of danger that deepfakes can bring about. The first is the direct damage that can be caused by a particular piece of fake media. The second, and arguably more serious, is that when we all feel as if we can't trust anything anymore, it's possible for us to grow apathetic and disengage from our social and civic duties, or we make bad choices based on total lies. And third, when anything and everything can be convincingly faked, it gives liars an easy way out. All they have to do is say, "That wasn't me...it's fake." You'll now hear Claire Wardle from the New York Times explain more about these dangers, and, and how serious we should be taking them. Or...maybe not.

Claire

Yes, deep fakes are eerily dystopian, and they're only going to get more realistic and cheaper to make, but the panic around them is overblown. In fact, the alarmist hype is possibly more dangerous than the technology itself. Let me break this down. First, what everyone is freaking out about is actually not new. It's a much older phenomenon that I like to call the weaponization of context, or shallow fakes, with Photoshop and video editing software. You can have a really simplistic piece of misleading content that can do huge damage. You don't need deepfake's AI technology to manipulate emotions or to spread misinformation. This brings me to my second point, what we should be really worried about is the liars dividend, the lies and actions people will get away with by exploiting widespread skepticism to their own advantage. So remember, the Access Hollywood tape that emerged a few weeks before the 2016 election,

Trump

Hey, when you're a star they let you do it, you can do anything....

Claire

Around that time, Trump apologized. But then more recently, he's actually said, "I'm not sure if I actually said that." When anything can be fake, it becomes much easier for the guilty to dismiss the truth as fake.

You'll now hear Sam and Nina discuss this same idea, also using the example of the infamous Access Hollywood tape of Donald Trump. Then their conversation shifts to the race to develop technology that can detect and fight back against deepfakes. As a side language note: In Sam's first sentence, you will hear a great example of hyperbole, or exaggeration for effect. He's using hyperbole to express that the pre-COVID era feels like it was a very long time ago.

Sam

Many of us can dimly remember 20 years ago before COVID when the Bush audiotape dropped, and Trump sort of attempted to deny that the audio was real of him on the bus. But we were not yet in the presence of such widespread use of deep fake technology that anyone was even tempted to believe him. We knew the audio was real. We can see the resort to claiming fakery that will be relied upon by everyone, and anyone who is committed to lying, because they'll be so much of it around that, really, it's uh, you know, it will be only be charitable to extend the benefit of the doubt to people who say, "Listen, that wasn't me, that's just a perfect simulacrum of my voice and even my face. But you actually can't believe your eyes and ears at this point, I would never say such a thing."

Nina

The sheer volume, when you talk about...at the scale at which you can generate synthetic media, means that humans are never going to be able to go through it all, never going to be able to fact check each piece of media. So we have to rely on building the AI software to detect, for example, deep fakes. And right now there is an interest and increasingly there are certain experts and groups who are putting money into being able to detect deep fakes. However, the problem is because of the adversarial nature of the AI and the way that it's trained, every time you build a detector that's good enough to gener- to detect the fake, the generation model can also become stronger. So you're in this never ending game of cat and mouse where, you know, the you keep on having to build better detectors. And also given the various different models and ways in which the fakes can be generated, there's never going to be a one-size-fits-all model. And

Nina

Ultimately, this is a human problem, to the extent that disinformation or bad information didn't just come about at the turn of the millennium. It's just that we have never seen it at this scale. We have never seen it this potent, and we have never ever been able to see...to have it as accessible as it is now. So ultimately, this is a human problem. There's no way we can deal with the challenges of our corroding information ecosystem without talking about human quote unquote, solutions. How do we prepare society for this new reality? And we are way behind, we're always reactive, our reactions are always piecemeal. And the biggest problem is the information ecosystem

has become corrupt to the extent that we can't even identify what the real risks are, right? We're too busy fighting each other about other things without seeing what the real existential risk is here.

Sam

Yeah, yeah, I mean, that that is a very symptom of the problem itself, the fact that we can't even agree on the nature of the problem. There's so much disinformation in the air.

Sam

If we can't trust people, and we can't trust the evidence of our senses, when we have media of them, saying and doing things, convincingly delivered to us in torrents, it's hard to see how we don't drift off into some horrifically dystopian dream world of our own confection.

Nina

Absolutely. And this is really why, you know, I wrote the book, I wrote it in a way that was very accessible to anyone to pick up and zoom through in an afternoon. Because I think, without this conceptual framework, where we can connect everything from Russian disinformation to the increasingly partisan, political divide in the United States, but also around the rest of the Western world, and understanding how now with the age of [???] with the age of synthetic media upon us, and how our entire perception of the world is going to be changed in a way that is completely unprecedented, how we can be manipulated in the age of information where we had assumed that once we have access to this much information that, you know, surely progress is inevitable. But to actually understand how the information ecosystem itself has become corrupt, I think, is the first step.

Lori

So a first step is understanding that our information ecosystem is becoming corrupt, and we're being bombarded with media that is intended to manipulate us and shape our opinions. Most people would agree that having access to trustworthy, accurate information is crucial to a well-functioning society, and that deepfake technology puts that in jeopardy. But how do we approach a solution? Is it a technology problem, or a human nature problem? Can technology help us out here, or is it up to us as individuals to be better at critical thinking? Here's Claire Wardle again:

Claire

What really keeps me awake at night is less the technology, it's how we as a society respond to the idea that we can't trust what we see or what we hear. So if we are fear mongering, if we are hyperbolic, if we are waving our hands in the air, that itself can be part of the problem. You can see where this road leads. As public trust in institutions like the media, education and elections dwindles, then democracy itself becomes unsustainable. The way that we respond to this serious issue is critical. Partly this is the platforms thinking very seriously about what they do with this type of content, how they label this kind of content. Partly it's the public recognizing their own responsibility. And if you don't know 100% hand on heart, "This is true," please don't share, because it's not worth the risk.

Lori wraps things up

I wonder—what would our present society be like now if we followed that advice? If we didn't share things unless we knew, hand on heart, 100%, that they were true? As Nina pointed out, deepfake is a nascent technology, so this is only the beginning. I wonder what will be possible tomorrow, or next month, or within the next two years, the next two decades. We've only scratched the surface of this fascinating and important topic.

I hope this episode gave you lots of interesting vocabulary, grammar, and other language that you can learn from. And failing that, I hope it at least gave you something to think about and discuss in English with your friends, family and colleagues. If you have found this topic interesting, definitely check out the show notes and transcript. I've put links to all of the media that you've heard in this episode, plus links to lots of supplementary material for further reading and listening. You can find the transcript linked in the show notes, or just go to betteratenglish.com/transcripts where you can find this episode and many more.

That's all for this time. This is the 100% real and genuine Lori, signing off from Better at English headquarters, wishing you an inspired and productive day. Bye for now!

Material used in this episode

The Making Sense Podcast with Sam Harris

Episode #220 The Information Apocalypse: A Conversation with Nina Schick

<https://samharris.org/podcasts/220-information-apocalypse/>

Deepfakes: Is This Video Even Real? Claire Wardle of the New York Times

https://www.youtube.com/watch?v=1OqFY_2JE1c

Vocal Synthesis Youtube Channel - <https://www.youtube.com/channel/UCRt-fquxnij9wDnFJnpPS2Q>

6 presidents read the Twilight Zone intro - <https://www.youtube.com/watch?v=B2HIDk-u1hQ>

Donald Trump reads the Darth Plagueis cospasta - <https://www.youtube.com/watch?v=LEzIAixNkFI>

Supplementary Material

Nina Schick's Book: [Deepfakes: The Coming Infocalypse](#)

Deepfakes: A threat to democracy or just a bit of fun?

<https://www.bbc.com/news/business-51204954>

The Irishman - de-Aging of Robert de Niro

https://www.youtube.com/watch?v=dHSTWepkp_M

Here's why deepfakes are the perfect weapon for the 'infocalypse' - By Nina Schick

<https://lifestyle.livemint.com/smart-living/innovation/here-s-why-deepfakes-are-the-perfect-weapon-for-the-infocalypse-111602247119544.html>

Deepfakes: How to prepare your organization for a new type of threat

<https://www.accenture.com/nl-en/blogs/insights/deepfakes-how-prepare-your-organization>

A deepfake porn bot is being used to abuse thousands of women

<https://www.wired.co.uk/article/telegram-deepfakes-deepnude-ai>

Deepfake video of Vladimir Putin

<https://www.youtube.com/watch?v=sbFHhpYU15w>

Deepfake video of Kim Jong-Un

https://www.youtube.com/watch?v=ERQlaJ_czHU

Access Hollywood tape with Donald Trump and Billy Bush (2016) - vulgar, profanity, not safe for work

<https://www.youtube.com/watch?v=FSC8Q-kR44o>

Actress in Trump's 'Access Hollywood' Tape reacts to Trump's claim that he's not sure he "actually said that".

<https://www.youtube.com/watch?v=uRIPFJcPbq4>