Danielle Hennis:
Hi, everyone, thank you so much for coming. My name is Danielle Hennis. And I am a presentation specialist at Make It Memorable, where we work with researchers and universities and corporations to help them make presentations a little bit more memorable and engaging and persuasive.

And I especially love working with researchers and scientists and helping them take this vast amount of data and turn it into something that engages with your audience. So today, we're gonna be talking about how you can deconstruct presentations and kind of reconstruct them in a way that really helps your audience a little bit better. Today is a slightly shortened version of what I normally present.

And if you are interested in a longer presentation, send me an email, I'm happy to give you a free link for the next time that I do it, which would probably be in 2021. And if you're interested in learning further, I also have two other presentations that I do decoding slide design, where we talk about how your audience processes visuals and how you can use that to your advantage when you're designing your own slides. And then how you can use PowerPoint to your advantage by demystifying some of the tools that we have there and use them to your advantage.

So those will all be replaying in the new year, send me an email, and I'm happy to send you a link to when we'll be presenting those again. So to start, I want to talk about how memory works. And your brain is this incredibly impressive organ that has this huge capacity for memory. But for information to be remembered, it has to go from your working memory to your long term memory.

How many of you have had to sit through presentations that look like this? So most of you have made presentations look like this. The problem is, it's an easy way to not forget anything that you wanna say, because it's all on the slide. But it's a really bad way to engage your audience and it's a really bad way to get your message across because your audience tends to experience cognitive overload really quickly, with this type of presentation. If you haven't experienced these lovely slides, you've probably experienced something that looks like this, no more than six words per bullet, no more than six bullets per slide.

The problem is that neither of these are effective. And so to think about how we can create more effective presentations, I want you to take a step back and think about why are we making presentations in the first place. Are we making presentations just because they're easy, and they're cheap, they're an easy way to kind of get your information out there, you don't have to spend a ton of money or time on creating them, because you can just put everything that you want to say in the slide deck, and then just read it to your audience. Or maybe we're making them to fulfill some sort of goal or requirement and we have to do it.

Neither of these are audience-centric. They're very presenter-centric, and it's all about what the presenter needs when they're creating a presentation. But ideally, if you're creating a presentation that is more memorable, that's more engaging, and that tends to be more persuasive. You need to think about your audience. So think about, why are you making a presentation for your audience? Is it because you want to be a catalyst for change, and you want to, you know, connect with other researchers within the biodiversity or the conservation field, maybe you're more in education, and you want to train others and you're imparting knowledge that you have on to either the general public or to other people within the field, or maybe people who are learning and you're an educator within a university setting. Or maybe you're doing it to make an impact on the community at
large or within the field itself, and that you're trying to kind of drive change forward. Because if you're doing it for any of the latter three, creating slides full of text is not going to cut it.

So I encourage you to rethink how you've been making presentations in the past, kind of put a pin in how you been making presentations and come along with me as we talk about how the brain works and how we can use visuals and storytelling to our advantage. And think about how you can make presentations a little bit differently. So to start, we're going to talk about memory. Now, there are three systems of memory. And we're going to briefly cover these and talk about why that matters. So you have your sensory memory, which is the first one which is everything that you can smell, taste, touch and hear going on around you.

And within a presentation, especially if you're able bodied, we tend to focus on hearing and seeing and that's because the presenter is speaking to you and they're showing you slides or you're looking at their body language. And so we tend to focus on those two but there are also all the other elements that are going on around you. There are distractions. You know, if you have your dog that runs in the room as you're sitting on a zoom presentation, then that's going to distract you or if you, you know, there's noise going on outside or you have some other distractions that are occurring, especially your phone tends to be a huge distraction.

These are things that are preventing you from processing what the presenter is saying. And as a presenter, you need to be aware of those things. Ideally, whatever you're saying is going to at least make it somewhere close to the working memory, which is that liaison between the sensory memory and the long term memory, it can pull in information from both systems, and it can process it for about 30 seconds at a time. And it can process about four pieces of information at a time. And then you have your long term memory, which is what we tend to think of as memories. So this is what you can remember when you were three years old to what you ate for breakfast this morning.

And the information that is stored here is stored for an indefinite period of time. And you can pull it out for later use when you need to. To put it a slightly different way your sensory memories is this inbox, it's being replenished and depleted every quarter of a second. And you have a split second to decide whether what a presenter is saying is worthy to pull out of that stack of this stream of information that you're being presented with daily and milli-secondly, and if that's important enough, then you're going to pull it onto your working memory, or your messy desk. Your messy desk has space for about four pieces of paper, and you can hold it there for 30 seconds.

After 30 seconds, you have to decide, is that information worth keeping on that desk? Or do you want to throw it away because you no longer need it? In which case it's gone forever? Or do you want to hold on to it. If you want to hold on to it, then you need to encode it or transfer it into your long term memory, which is basically this extensive filing folder within our brain. Now, if it never makes it to your long term memory, it's never remembered.

So as a presenter, your goal is to get the information that you're presenting into your participants long term memory. Because if not, it's left on the conference or left at the proposal table or left at the job presentation, right? Like it's not made it to the audience's working memory or long term memory. So it's never remembered. So we have our four pieces of paper on our messy desk and we have our long term filing cabinet.
And the question is, how do we get it into our long term memory? Well, there's two ways in which you can do that. The first way we tend to do whenever we're learning something new is that we just tend to repeat the information over and over and over again, eventually, our brain decides, alright, this is important, I'm going to make a file folder for it. And I'm going to store that away into a file folder. But this takes a lot of cognitive energy. As an audience member, they have to be able to hear what you're saying, bring it into their working memory, repeat it a ton of times and then make a file folder for it and their brain.

At the same time, they're supposed to still be listening to what you're saying in the presentation. So we don't really have time for this in a presentation format. Instead, a better way to do it, is to make it relate to something your audience members already know. So you want to think about who is in your audience, and what do they already know and relate it to something that they're already aware of. If you think about how you learned, you probably have done this already.

So when you first started learning science, say in elementary school, you related it probably to the world around you. And then when you first learned biology in high school, you related it to kind of the science that you already learned from previously. But also you related it to kind of like what you saw in life. And then when you started to specialize in college, you're relating it to the concepts that you're already aware of within biology and within other science fields. And you just kind of connected these schema trees, which is what these file folders are.

So we have file folders within file folders within file folders, which are like this schema inception or this organizational file folder within our brain. To give you an example of how this works, I want you to close your eyes and try and picture this animal that I'm going to describe for you. I'm going to give you two descriptions of the same animal. Description number one: a viscacha is a medium large, brown rodent from South America. Its ears are medium long, its tail's long and can curl, and it has strong hind legs. Description two: a viscacha is a slightly large rabbit that is brown, from South America. Its ears are shorter than a rabbits' and its tail is longer, and can curl. I want you to open your eyes and think about which of those descriptions was easier to picture.

So oftentimes when I do this, about 95-98% of people will say description two. And there is some variability because it depends on your own schema tree within your brain. But typically, the schema rodent is much more diverse, and it's higher up that schema tree than rabbit. So there is a variety of rodents, you have to decide which rodent looks most like the animal that you're picturing. And you can still picture something, but it's less likely you're going to picture something that's kind of correct. Whereas when I give you the schema rabbit, there's still a variety of rabbits. But in general, when you think of a rabbit, people tend to picture something kind of like this. And then you just follow along with what I tell you.

So you chop off his ears a bit, you grow its tail, make it curl, and you have a viscacha. So why are we talking about rabbits and viscacha? Well, it's important because as you're presenting information to your audience, you want to relate it to something your audience members already know. But it's up to you to know who is in your audience and what they know. So that you can connect it with something they're already aware of. So if you're presenting to a group of people who are in a variety of science fields, you need to go up that schema tree, and present something that relates to something using metaphors using analogies that everybody within that context is going to understand. versus if you're presenting information to
a bunch of people who are within the biodiversity and conservation field, you can use really specific examples.

And you can use jargon that are within the field that maybe people who are in related fields might not know when you present to people within those conferences, so think about who is in your audience, and what you need to present to them and what they're going to understand. The next section that we're going to talk about, I want you to try and remember these numbers, in order without writing them down 1776200819842019 now, and let's use a trick, no one can remember that because I just gave you 16 random numbers to remember and your working memory can hold for plus or minus one pieces of information.

But what we can remember is we can remember chunks of information. So if I were to present that same information in a slightly different format, and tell you to remember four chunks of four units of information, we could all remember four years. But it's up to you as the presenter to present the information in a way in which your audience is going to understand and process the information you're giving them, they're not going to be able to process and remember 16 random numbers, but they can process four years. So you want to take the information that you're giving them.

And you want to stack those pieces of paper and present chunks as opposed to random pieces of information. And by presenting those chunks, you're able to hypothetically transfer all those chunks into your long term memory or your audience's long term memory by using schemas, metaphors and analogies. So at this point, we have covered everything that was on that first slide. But if I kept that first slide up this whole time, you would have probably zoned out from cognitive overload very quickly on. Instead, I spent 10 minutes talking about the slide with multiple slides coming up and showing only what I was talking about.

And so it's really important when you're presenting to think about your audience, think about what they can process. And think about how your working memory is very limited. So you want to present no more than four chunks with three to four pieces of information with any chunk, and you want to present them in terms of schemas, so using metaphors and analogies. That chunking is really important because if you present too much, you're going to lose your audience. And schemas are going to help your audience encode the information that you're telling them into their long term memory. So the next section we're gonna talk about is visuals.

Now, visuals are really important, and they're often overlooked, especially within scientific presentations. So when we're presenting information, we have auditory information and visual information. And it's really important to think about both of these because we can process the information coming in auditorily and visually simultaneously. That's why when you're sitting in a presentation, or you're sitting in a meeting, you can listen to what the person who's in the meeting is saying at the same time, you can doodle on a piece of paper.

But if you're talking to your coworker and trying to write an email, those are both auditory information and you're going to end up writing what you're speaking. So you can't do two things within the same channel. But you can do cross channel simultaneously. Oftentimes, when we think of auditory, we just think of the words that we're saying. But it's also the words that are written and the words that we write as an audience member. The visual channel is more than just images. It's also charts and graphs, and diagrams and flowcharts.
And this is the main reason not to read your slides. Because when you're asking your audience to read the slides, and process what you're saying, they're processing it once visually, because they're looking at it twice, because they're reading it to themselves, assuming they can read the slides when it's so far away in such small text, and then three times when you read it to them.

And so they're going to experience cognitive overload much quicker, they're going to zone out much quicker, and you're much less likely to get the information that you want them to understand into their long term memory. Unfortunately, most of our presentations, don't utilize our visual channel, we end up filling up our slides full of auditory information to the words that we're saying and the words that we're writing. And we don't really use the visual channel to our full advantage, we very rarely are using slides with diagrams and flowcharts and images on it. And we're not filling it full of text as well. So how do we do this?

Well, oftentimes, what I see people do is that they'll take a slide full of text, and they'll say, all right, I need to include an image, I'm just going to squish that image on to the slide. Unfortunately, this is not very effective, you have actually just probably decreased the font size and filled the text full of information and made it really difficult for your audience to process it. Instead, you want to think about what it is that you're saying.

And what it is that you can show visually, instead of writing it on the slide. So ideally, you're replacing words with some sort of visual, and then you're explaining it verbally and speaking to it, so that your audience can see it, read it, if they have to, if it's absolutely necessary, and then listen to what it is that you're saying. If you need your audience to be able to read these slides after or you're giving them as handouts, you can also include a note section, which is at the bottom of the slide in basically all the PowerPoint software, you pull it up, and you can type whatever it is that you want in there. And then you can hand it out to your participants either before or after.

So they have all the information that you're saying. Visuals are also more memorable. So Standings did this study where he had participants study 100 words, 100 images, and 100 emotive images. So things that elicited some sort of emotion within the participants. And he found that after 100 of these participants could remember 70% of the words but 96% of the emotive images. Now sometimes it's really hard to include emotive images within scientific presentations, I get that.

But oftentimes, you can still include some images and images by themselves are really powerful, one because they're much more memorable than words. But two, because we never stop remembering images. So Standings took this study. And then he was like, when do we stop remembering. So he gave participants 10,000 images to study. And after 10,000 images, participants could still remember over 6000 of them, they could remember two thirds of the images that were presented to them. And so as far as we can tell, there is no point in which we stop recalling images.

And it's important to use images if they make sense in your presentation, as opposed to just filling the slides full of text. So it's important when you're using visuals to remember that they're more memorable, they're easier to process and they're much less likely to contribute to cognitive overload. The next section I want to talk about is storytelling. Now storytelling is really important, because it's been how we've passed down our histories and our moral lessons for generations upon generations. And our brains are wired for stories. The tortoise and the hare was told over
2000 years ago, and it's still being told today. But oftentimes when I talk about storytelling within science, people say, you know, that's, that's great.

But I'm a scientist, we don't tell stories, we tend to just show facts and figures and data. And I would argue that science is nothing but storytelling. You are going on a mission to try and solve a problem. And by doing that, that automatically is a story. How did you solve it? What did you go about doing? What did you try what worked? What didn't? Those are all stories right there and then. A standard story arc goes like this. You have an exposition, the scene that you're setting and then there's a problem. The problem leads to some sort of climax. And then there's a resolution.

Within science and within life, your story arc tends to look a little bit more like this. There's a lot of bumps in the road. So to turn science into a story, I'd encourage you to think about the story arc, starting the exposition, what led up to the story, what is the problem that you are trying to solve that is indicating that kind of rising action, and then the things that you tried to use to solve the problem. Those are the rising actions and potentially the bumps along the way, then what do the results look like, is your climax with the resolution and the conclusion.

It's also important to include stories in your presentation because stories are more memorable than words alone, and more memorable than data alone. So one study looked at 12 lists of 12 words, and after 144 words, participants can remember about 13%. But when they took that same piece of those same pieces of information, ask participants to study those hundred and 44 words, by turning them into stories, they can remember over seven times the amount of information just by taking the information and turning it into a story.

In Made to Stick, Chip and Dan Heath talk about this experiment they do at Stanford, where they break students into small groups of no more than eight students. They listen to one minute presentations from each student about crime statistics in the United States. And after that one minute, they're distracted for 10 minutes by watching Monty Python, and then they're asked to write down every single thing that they can remember. In general, they can remember about 5% of the statistics, but they can remember 63% of the stories.

Numbers by themselves aren't enough, you need to tell the story behind the numbers tell why they matter. 60% could be huge, or it could be tiny, and it's up to you to tell the audience what it is that they need to know about that number. Why does that data matter. So remember to include stories in your presentation, they're more memorable, they're easier to process. And they're really important, it's really important to show the meaning behind the data. And not just the numbers themselves don't include tables. Instead, think of ways in which you can use those visually. So finally, I want to talk about some organizational techniques.

Oftentimes, when I do this presentation, people, they can understand the theory, but they really struggle with how they actually apply that into their next presentation. So I want you to think about we've talked about, we talked about storytelling and visuals, metaphors, analogies, and kind of telling the meaning behind things as opposed to just presenting data. And that's a lot more like a documentary than it is a document. And if you were to walk into a documentary to see a movie, you sit down, curtains open opening credits roll, and the documentary starts like this.
You're probably trying to figure out how to leave that theater as quickly as possible. So don't be a presenter people are trying to escape from. Instead, think about before you start your presentation before you even open PowerPoint. How do you make a documentary? Well, the first thing every documentary needs is a script. A script should not be a word for word description of what it is that you're going to say.

Instead, it should be a one page outline of the things that you want to cover. So what are the topics? What are the examples and the details that you're giving? And then look at that outline? Does it cater to your working memory? Does it contain no more than four chunks with three to four pieces of information within each one? If it doesn't restructure the outline, so that it actually does apply to what your audience needs, and then look at the order in which you're presenting information. So oftentimes, when we present information, we tell them what we're going to tell them, we tell them and then we tell them what we told them, right?

Unfortunately, our brain remembers in reverse. So the primacy and the recency effect, show us that we remember what comes first and we remember what comes last. And we tend to forget all of that stuff in the middle. You can cheat this, you can create little gaps and reset the primacy and the recency effect by showing a movie or telling a joke or, you know, asking the audience a question or bringing in a second presenter. There's different ways in which you can engage the audience by re engaging them in the middle of the presentation, in which case they're going to be more engaged and they're more likely to remember that middle.

But it's up to you to think of what makes the most sense for your presentation. And then once you create your outline, you want to create hooks. So thinking about your scientific story, your scientific pyramid, you have the intro and then a previous lit review, data, methods, results and the conclusion.

Journalists, on the other hand have an inverted pyramid, they start with the lead, they go into so what and then they end with supporting details. I'd encourage you, as does Jonathan Suarez, who came up with this idea is to combine these two together, start with the hook, and then go into the lead, have the items in the middle that are still important, but not necessarily the most important thing that you want people to walk away remembering, end with what matters and with the conclusion and the call to action, or whatever it is that you want your audience to know, when they leave your presentation.

Oftentimes, I'm asked what a hook is. So a hook can be anything that you want, that engages your audience, and it doesn't just have to be at the beginning. It can be throughout your chunks. If you watch, you know, Ted Talks, there's a variety of ways in which they start, they all start with a hook. Some start with surprising the audience or asking a question, some tell a story or use a joke. Some will start with a belief statement or like imagine the world or they'll start with a powerful visual.

Another way to do it is to create these gaps in knowledge within the presentation. So you want to not completely tell the audience what it is that you're going to tell them, and instead create kind of this gap that they're not, they're aware that they don't know something, but they don't know the answer yet. That tends to increase interest. And it keeps them engaged. It's what all reality TV and Netflix does really well, right?

It ends on a cliffhanger, and then you want to watch the next episode. The cliffhanger doesn't have to be the end of your talk. It can be in the
middle, or after chunk one, or whatever it is that you think makes the most sense. So finally, I just want to leave you with kind of a review of what we talked about.

So I want you to cater to your working memory when you create your next presentation, use schemas, use analogies, metaphors, use chunking. Think about how you can use visuals and replace the words on your slide with a visual component. Tell the story behind what it is that your research is and what it is behind the data that you're presenting.

And then finally, do not open PowerPoint until you've at least outline your presentation. And then you can open it and you'll make a more engaging presentation. And if you do that, we hopefully won't see any more presentations that look like this. But instead you'll be connecting with the community one presentation at a time. Thank you all for attending this talk today.

If you have any questions if you'd like any references, or I have two handouts that I can supply you with, send me an email at danielle@makeitmemorable.studio. I'm happy to answer any questions or supply you with further references or resources. And if you would like a free 20 minute consultation, go to makeitmemorable.studio you can sign up there and I'm happy to look at your presentation or talk to you about what it is that you're presenting and how maybe you can restructure it a bit differently. So thank you all, happy presenting.