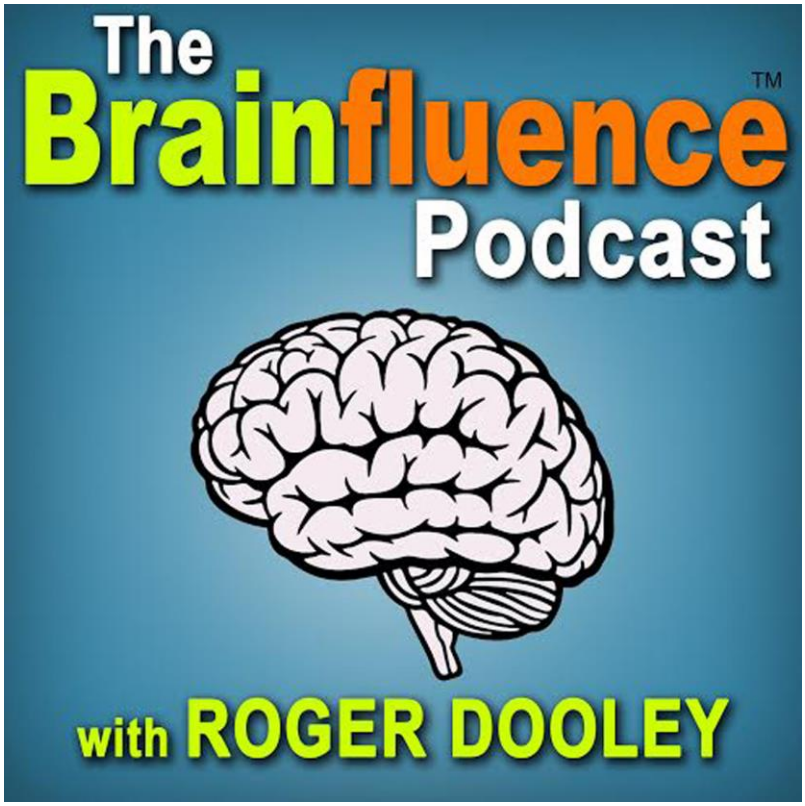
Ep #96: Your Brain on Animation with Carla Clark, Ph.D.



Full Episode Transcript

With Your Host

Roger Dooley

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Welcome to *The Brainfluence Podcast* with Roger Dooley, author, speaker and educator on neuromarketing and the psychology of persuasion. Every week, we talk with thought leaders that will help you improve your influence with factual evidence and concrete research. Introducing your host, Roger Dooley.

Roger Dooley: Welcome to *The Brainfluence Podcast*. I'm Roger Dooley. I've got a real treat in store for you today. Our guest today has a Ph.D. in biophysical chemistry and works with The Draw Shop, a community that creates whiteboard animations.

She's also Brain Blogger's psychology and psychiatry section editor and writer. As well as a scientific consultant in multiple fields including psychology, neuropsychology, biotechnology, molecular biology, and biophysical chemistry. As you might expect, she's involved in a lot of projects from gamifying apps to using data research and innovation to make the most out of different kinds of ventures.

Welcome to the show, Carla Clark.

Carla Clark: Hi there Roger, thanks for having me it's a real pleasure to talk with you today.

Roger Dooley: Right, well we're glad you could join us all the way from Athens, Greece. That's wonderful. That's a first for this podcast, I think. So today we're going to talk about some of the science and research related to animation, and in particular whiteboard animation.

I guess most of our listeners know what whiteboard animation is but just in case, I describe it as an

animation or video that starts with a white background. Then a hand draws simple figures or writes an occasional word or two to accompany spoken narration. This would be an alternative to, for example, a human narrator being on screen and giving the presentation. Have I explained that reasonably closely do you think, Carla?

Carla Clark: More than reasonably closely, that was a perfect explanation, yeah.

Roger Dooley: Great, well there's a nice intersection of whiteboard videos and the psychology of persuasion. All of our listeners are familiar with Robert Cialdini who is actually a past guest on the show. He and his team created a whiteboard video explaining the six principles of persuasion. That's gotten more than six million views on YouTube. I'll put a link to that in the show notes. I guess if the master of persuasion psychology believes in whiteboard videos, that's a pretty powerful endorsement. Clearly that faith was justified with all those views.

Carla, in a typical whiteboard animation there is always a hand that's sort of moving around on the screen doing the drawing apparently. Now is that a real hand or is that an animation too?

Carla Clark: It is a real hand. The footage is of a real hand. But different companies take different approaches with how they create their videos. The way The Draw Shop does it is that they actually have a real artist creating custom designs rather than the alternative approach, or one of the main alternative

approaches, is to use a library of premade animations in different categories. Then they stick them all together to make a story.

But The Draw Shop's side of doing things, using real artists, allows a lot more creativity and getting a lot more exact representation of what a client has in their mind. And also allows us to use the real artist's hand if and where necessary.

Roger Dooley: Is the hand an important part of the whiteboard video concept? As opposed to say the content simply appearing gradually on the screen, does the human hand make a difference?

Carla Clark: Yeah, the human hand makes a huge difference. It's a part of one of the many neuropsychology-based reasons why whiteboard animation videos are so effective. It's kind of linked with attention, how the hand adds to this effectiveness.

So the animation has this artist's hand, right, that's sketching throughout the video. This provides a visual progression where you can really direct the viewer's attention to consume a lot of information in a really logical sequence, one step at a time, preventing wandering attention and dips in viewer concentration.

Which if you've got a message you really want delivered, you don't want happening. It's just like if in real life. If you see someone pointing up into the sky or pointing somewhere, your eyes are naturally drawn to that area, right?

Roger Dooley: Right, well that makes a lot of sense. Another question I have, it sort of relates to the human element. In this case, the lack of a human element. Because the alternative to say an animation video, say you or I wanted to explain a concept to an audience for two or three minutes. We could either use our face on screen, talking about it. Or we could use as one alternative, use an animation.

Now we know that humans are really programmed to look at faces. If you look at say a heat map of an advertisement that has a person in it, the person's face is always going to be one of the hot spots in the ad. But it seems like the research shows that a human face when it's on the video screen for multiple minutes continuously is not all that interesting. Would that be correct?

Carla Clark: Yeah, kind of, in a way. I wouldn't necessarily say that it becomes less interesting but as viewers we're naturally attracted to faces as you mentioned. But it also, rather than paying attention to what someone's saying, automatically and naturally we have these theory of mind networks in our brain that place what we think our ideas are about what other people are thinking and saying. It kind of detracts away from the message and you're too busy analyzing that person and creating ideas about them and judgments.

So rather than paying attention to the message, you're paying attention to the person. That can be quite distracting. It's one of the key ways that

whiteboard animation videos, along with many other ways that direct attention, are so effective.

Roger Dooley: Yeah, I guess I've seen some data too that shows that if you compare an animation video with a sort of talking head video and you do eye tracking in both cases, that the eye tracking on the animation video shows that people continue to follow the motion there. Where on the talking head video, pretty soon their attention is wandering even off the screen.

That's obviously if you are trying to convey a message, having people wandering around looking at maybe Facebook notifications or other stuff that happens to be outside your live area, is not really optimal for attention.

Carla Clark: No, and you've just reminded me in fact of some research into whiteboard animations that was comparing with talking head videos. I think it was maybe 2012 or 2013. It kind of sparked research into whiteboard animations. It was by a psychologist and scientist, I think you should be familiar with some of his work, Dr. Richard Wiseman?

Roger Dooley: Yeah, sounds familiar but it's not coming to mind right now.

Carla Clark: Yeah, well he compared a conventional talking head video and a whiteboard animation video. I think it was his own head in the talking head video. They both aimed to deliver the exact same message and he had 1,000 people watch each video and then he tested them on the videos' contents to see if one,

they were paying attention. And two, if they absorbed the information and it was in their memories afterwards.

I think if I'm getting the numbers right, around 90 to 92 percent, something like that of the whiteboard video viewers answered all of the test questions correctly. Compared to around 70 percent for the talking head video. So that's like a whole 22 percent extra of these viewers, that's 220 more people that got full marks.

Then I think if you look at the actual overall test scores, there was a whole 15 percent increase and recall of all the specific numbers and details and facts in the whiteboard video over the talking head. So that's a key indicator there that you're really being able to grab people's attention and not just grab their attention, whatever information you're giving them, it's really going in there.

Roger Dooley: Yeah, that kind of difference in recall is really amazing. I suppose he probably should have tested several talking heads rather just his own to see if that made a difference. But still, it's an interesting study.

Something else that you've spoken about that I find really interesting is the use of visual metaphors that you can do in an animation, or you could even do it say in a static situation like on a website. But rather than simply explaining something, underscoring the spoken words with a visual metaphor for that same thing. So how does that work?

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Carla Clark: So I love this topic in general. It's a good conversation topic from me. I really enjoy it. The research supports the idea that our knowledge and experience is generally metaphorically represented in our brains. During sleep our brains relate and bind and integrate facts from our experience throughout the day into this kind of pneumonic compositional whole for our long-term memory retention.

So it's only natural, right, that we use metaphors in our day-to-day language because it taps directly into our real life experiences and the brain and the emotions that come with them. There's a really nice study to explain this. It was an fMRI study where scientists used texture-related metaphors. So this was spoken metaphors, not visual metaphors. But the take home message is still the same.

They took texture-related metaphors and they compared them with sentences that essentially have the same message but they didn't use a metaphor to explain that message. For example, “I had a rough day at work today.” Compared with say, “Today was a really difficult day at work.”

The researchers found that there was a part of the brain, the somatosensory cortex, that we use to interpret real-life textures that we touch with our skin and our body, that these parts of the brain lit up when using the texture-related metaphors. So of course I just said “I had a rough day at work” now and this happens to my brain, your brain, and the listeners’ brains.

But our brains have to do a whole lot of work and activity to truly grasp that metaphor when it's not represented visually, like in a marketing message or any educational thing that you're trying to create with a whiteboard animation. If you have a more dynamic and complex message to deliver, which is often the case, that message in a written or spoken metaphorical format alone, it might not be universally recognized if you have a thousand viewers like in the last study we just discussed.

So for those viewers or listeners that don't get it, there's actually different networks in the brain that are activated that kind of jolt the brain into active thinking and trying to make sense of everything which diverts your attentional networks away from absorbing and retaining the crucial information that you're trying to deliver.

I think this is where this kind of visual blank canvas of the whiteboard video comes in, that you can visually and audibly present any metaphor you want and literally speak directly in the brain's own language if you will. So it makes it a prime target for viewers to really get the message and retain that message in long-term memory.

Roger Dooley: Yeah, I wrote about the textural metaphor thing awhile back. I'll put a link in the show notes to my post on that topic, but things like the "rough" is the best example. Where a rough day versus a hard day means exactly the same thing in English but your brain does not interpret those two things as being the same. Being able to say that your

customers are frozen and showing an icicle coming off of a customer or something, all these things really sort of add sensory information to the spoken stuff.

One of the other differences between whiteboard animations and even say more complex videos, whether it's a talking head or perhaps even video of live subjects doing something. Or perhaps a screen capture of some kind of a computer process is simplicity. There's something called the Geon theory that I was not familiar with until reading about this, that says our brain reduces complex visual data to simplified versions for processing. Can you explain that?

Carla Clark: Yes, so when we look at photorealistic objects, like in the real world or as you mentioned in a TV advert where it's using live footage or real footage. How our brains interpret that is we match what we see in photorealism to more simplistic 2D and 3D forms in the brain. So the simpler the object is, the less effort the brain needs in order to process and relate to the image. That kind of frees up the brain for other processing tasks.

So we're actually more wired to pay greater attention to the dimensional and rendering simplicity of whiteboard videos or cartoons. Cartoons are not just for kids, they're for all ages. And there's a reason why, as we mentioned about the simplicity. Because again, it speaks directly in the brain's language and kind of cuts out lots of effort that we have to do, which allows us to process the narrative

and the message. Which also should kind of boost chances of motivating some kind of action in the viewers because they're feeling good with what you're wanting them to do really.

Roger Dooley: Interesting. So I'm going to ask you a question here and I'll remind you that our audience is not made up of neuroscientists. I'm going to ask you what the temporoparietal junction is and why should the average content creator care?

Carla Clark: Right, nice. This is linked with emotion, this concept. So there is a part of the brain as you mentioned, the temporoparietal junction and we can call it the TPJ because it's just such a mouthful. On your head, it's actually on the backside of our heads where the temporal and parietal lobes meet. It's literally, it's called a junction, the TPJ for junction because it's literally where these two lobes of the brain meet. This area is one of the main driving forces behind creating a social media buzz.

I'll explain this a little clearer. Our brains consider an idea to be shareworthy when the TPJ lights up. This part of our brain is associated with mentalizing networks that are involved in thinking about what other people think and feel about an idea. So the more components of this system that you have activated, the more likely someone that's receiving an idea feels that they're able to convince someone else of the idea.

It's kind of when this part of the brain fires up it says, "Hey, this is information that other people will

be interested in." So obviously in the social media sphere it's a pretty important part of our brains that is firing all the time when we go, "Oh hey, Steve would love to see that video or whoever."

This is kind of where emotions come into the equation is that the mentalizing network is tuned into what we feel about an idea or a concept because the TPJ is also connected to emotional networks in the brain. So our brains use this valuable emotional information to help us rapidly and nearly subconsciously I would say, decide how we think a concept will make our friends feel.

The emotions that research keeps on throwing up as being important for shareability and we know through experience ourselves is that it's amusement, excitement, curiosity, intrigue, shock, or surprise. Lo and behold, this is the typical emotions that are stirred up with using whiteboard animations or using the whiteboard animation style.

It's an inherent part of the process is this fun and surprise, which is kind of setting the TPJ on fire and other parts of the mentalizing network which says, "Hey, you really want to share this video with your friends online." So yeah, that's the TPJ.

Roger Dooley: Interesting, so neuroscience researchers have been looking for the sort of mythical buy button for probably ten or fifteen years but maybe they should have been looking for the share button. Sounds like that's sort of what this is in a gross

oversimplification. The trick is of course how do you actually light this area up?

One other thing I noticed in your writing is that whiteboard animations under certain circumstances produce a dopamine rush. What's going on there? What aspect is it that sort of triggers that dopamine rush? Which of course is always a good thing since it's a reward neurochemical.

Carla Clark: Yeah, exactly. The whiteboard animation style, you'll have seen yourself. One, it's a cartoon. Two, the style is inherently fun with all these metaphors and visual representations and the fact that you can be as creative as you want. You're not limited by some budget that doesn't let you do special effects, you know? So you also have this step by step building up of anticipation as you unveil a message in this cartoonized fashion. So they're inherently filled with fun and surprise.

As I'm sure you completely know and lots of your listeners will know, that this is associated with the neurotransmitter dopamine. This is actually the reason why whiteboard animation videos have been compared to methamphetamine for the brain because dopamine is highly addictive or the effects of dopamine in the brain can result in a highly addictive sensation that will keep the viewers looking for and wanting more. They want more surprise. They want more fun. They want more dopamine-related stimulation.

But unlike many street drugs I would imagine, dopamine invigorates learning centers in the brain also. So even if you have again some kind of complex, longwinded, or even something really boring and dry, some kind of message that's still important to be delivered through this dopamine rush, whiteboard animation can really capture the attention. Then also ingrain the message in the viewer's brain using some fun and surprise.

Roger Dooley: Great stuff. Let me remind our listeners, we're talking to Carla Clark, neuroscience and psychology expert at The Draw Shop and Brain Blogger's psychology and psychiatry section editor. Carla, how can people connect with you or find your content online?

Carla Clark: You can check out and get in touch with The Draw Shop team either on Facebook or Twitter. On their website, you can actually instantly get started making a whiteboard video at the click of a button there at TheDrawShop.com.

If you want to get a hold of me, you can get me under the name Geek Reports on social media, that's Facebook and Twitter. I also regularly post on Brain Blogger as the psychology and psychiatry section editor there. So you can check out me on Brain Blogger as well.

Roger Dooley: Great. We will link to all of those places on the show notes page at RogerDooley.com/Podcast. Carla, thanks so much for being on the show, it's been fun.

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Carla Clark: Yeah, likewise, it was great talking with you.

Thank you for joining me for this episode of *The Brainfluence Podcast*. To continue the discussion and to find your own path to brainy success, please visit us at RogerDooley.com.