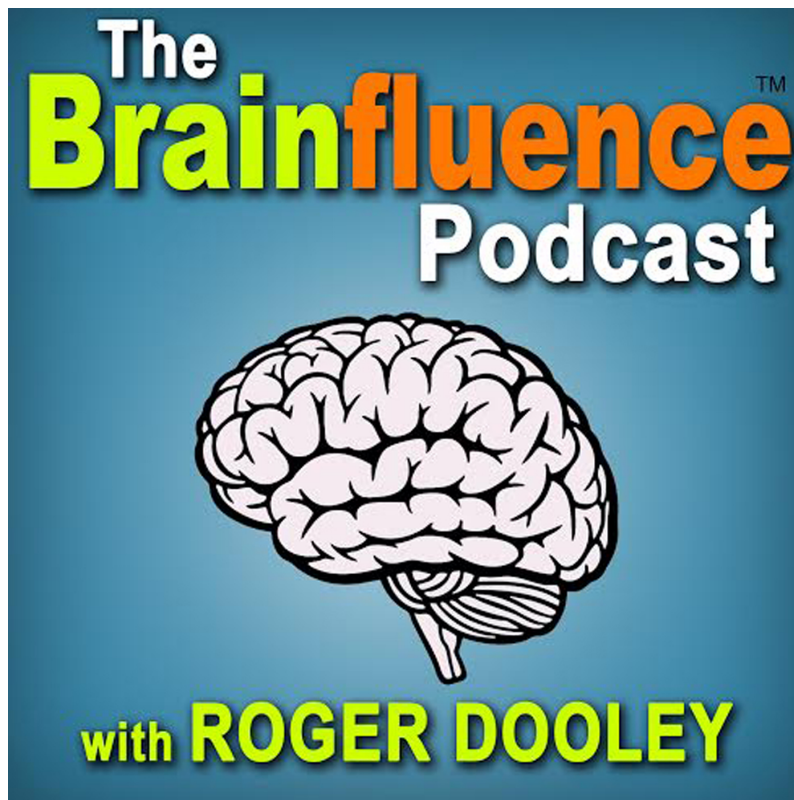


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Full Episode Transcript

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**Roger Dooley**

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## **Magic and Psychology with Matt Tompkins**

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Welcome to Brainfluence, where author and international keynote speaker Roger Dooley has weekly conversations with thought leaders and world class experts. Every episode shows you how to improve your business with advice based on science or data.

Roger's new book, *Friction*, is published by McGraw Hill and is now available at Amazon, Barnes & Noble, and bookstores everywhere. Dr Robert Cialdini described the book as, "Blinding insight," and Nobel winner Dr. Richard Clamer said, "Reading Friction will arm any manager with a mental can of WD40."

To learn more, go to [RogerDooley.com/Friction](https://www.RogerDooley.com/Friction), or just visit the book seller of your choice.

Now, here's Roger.

Roger Dooley: Welcome to Brainfluence. I'm Roger Dooley. This week, we've got a guest who is a change of pace for the show. Matt Tompkins is an American magician turned psychologist. He was a professional magician before entering academia. After earning a degree in psychology at the State University of New York at Geneseo, he went on to complete a master's in psychological research and a PhD in experimental psychology at the University of Oxford. Matt's research focuses on the cognitive psychology of illusions. He recently became the first member of the Magic Circle to be admitted on the basis of a peer-reviewed scientific publication. At the moment, Matt is currently a visiting academic at The Queen's College, Oxford.

Welcome to the show, Matt.

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Matt Tompkins: Hey, pleasure to virtually be here.

Roger Dooley: Matt, how old were you when you first started performing or trying to perform magic?

Matt Tompkins: I've got kind of the classic magician origin story of I started out as a very small child and then effectively didn't really grow out of it. I've got memories which I think are reasonably trustworthy, although a huge part of my research is about how I probably shouldn't trust them, of seeing magicians at a county fair when I was a kid and watching, particularly, coin tricks stuck in my mind, seeing coins appear and disappear, roll across the guy's knuckles.

And that got me a book called... It was a birthday gift called Bobo's Modern Coin Magic, which is a delightful piece for anybody who's interested in these kinds of things. That kind of got me started. I worked semi-professionally all throughout university, was working simultaneously in visual attention labs and working close-up magic sort of at the same time. Then when I started my graduate work, I wound up mashing the two of them together.

Roger Dooley: Well, that's great. These days, is it possible to support yourself as a magician, or is it one of those fields that only a tiny number of stars actually can make a comfortable living?

Matt Tompkins: I think there are a reasonable number of working pros. I guess it's sort of like where it's being a musician, in that you've got plenty of people that do it semi-professionally, plenty of people that are amateurs, and some people that

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do the work in pros. There's the big TV people and then there's plenty of, also, people that are boots on the ground, like close-up magicians in particular or people that do stage stuff. I think it's still a viable option, but it's not the particular path that I chose personally.

Roger Dooley: Great. Well, yeah, I can understand that. I don't know how many of our listeners want to head in that direction, but now they know what their prospects are like. So how did you go from, at least, somewhat of an interest in magic to the really long road of getting a PhD in experimental psychology?

Matt Tompkins: Yeah, it's been a long, strange trip, Roger. Like I said, when I was at university, I actually started out studying pre-med. I thought I was going to be a medical doctor back when I was like 18.

The situation was I was studying pre-medicine, working just for pocket money and rent money as a close-up magician, and I got the opportunity to start working a visual attention laboratory with a guy named Dr. Jeff Mounts, who's still at Geneseo. I had the opportunity to start doing this visual attention research, I was also taking courses and things like cognitive psychology and neuroscience, and I started to see things that, to me as a performer, really resonated with the kinds of things that I was doing in the close-up magic and the magic situation, this idea of these illusions of impossibility.

I know you've mentioned this on your podcast before, Dan Simons's really iconic invisible gorilla video and the accompanying experiment. I remember seeing that in a lecture theater and just being really struck that it felt, in

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many, many ways, like a magic trick. It was fundamentally different in a lot of ways, but there were a lot of powerful parallels there.

Roger Dooley: Right. For those of our listeners who don't remember the invisible gorilla bit, there's a classic study where scientists showed people a video of people passing a basketball back and forth on a court, and partway through, a person in a gorilla suit walks right through the center of the court, stops and stands in the middle, and then walks on.

Most of the people watching the video who were trying to count the number of basketball passes failed to see the gorilla at all, so hence the invisible gorilla, although once it was pointed out, everybody saw it, but while they were performing the counting task, even though it was right there in the middle of their visual field, they didn't see it.

Matt Tompkins: Yeah, so this gets into something that's really fundamental to a lot of the work that I do, which is a little bit of a twist on this, which sounds a bit tactical, but not too difficult, is the idea of what we would call metacognition, which is the idea of thinking about thinking. One of the interesting things about that gorilla video, and it's a little bit of a shame to talk about it like this on the podcast-

Roger Dooley: We've ruined it for everybody now.

Matt Tompkins: ... is when you describe it to a degree. Yeah, because when you describe it to people, it sounds impossible, right? And you did a lovely job of describing the methodology. Yeah, when you're counting the basketball passes-

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Roger Dooley: I should've said spoiler alert before that, although once you talk about the invisible gorilla video, you've pretty much a spoiler right there. I guess what they can do is try it on their friends, get their friends to watch it and see if their friends can count the basketball passes.

Matt Tompkins: As someone who's been doing this kind of research for a long time, I still get a great joy out of watching how other people react to it, so I highly recommend the vicarious gorilla video. You can still get good kicks out of that.

Yeah, the metacognition, because people think that of course everyone would see a gorilla. And the gorilla video is particularly interesting. There's a lovely history. Did you know that the gorilla video was actually a replication study?

Roger Dooley: I did not know that.

Matt Tompkins: The 1999 one, the original variation on that paradigm, this idea of people and a basketball thing and there's this weird, unexpected extra thing that walks through, they were conducting that back in the 1970s, a guy named Ulric Neisser, who was working at Cornell. The study was never properly published actually, because when they ran the experiment... It worked very similarly to the gorilla. There are some minor variations, but basically the same kind of experiment. And one of the reasons people think that that was never published is because when they ran it the first time, they thought the experiment was broken because the results were so bizarre.

Roger Dooley: That's great. I didn't realize that replication was a thing back 20 years ago. That's pretty fascinating. Of course,

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more recently we've had the replication crisis, where many famous experiments have not been replicated very well.

Matt Tompkins: Yeah, cognitive does okay with that. It depends on how you keep score with the different... how you slice the subdisciplines. Yeah. No, it's an ongoing situation that people are absolutely grappling with. I think it's progressing positively, but yeah, it's bit of a mess.

Roger Dooley: Yeah. So, Matt, what do your colleagues think of your field of research? Do you ever get, "Well, I'm working to cure mental illness, Glenda is focused on the societal impact of cognitive biases, and Matt, well, he studies magic"?

Matt Tompkins: Yeah, it's an interesting space to work in. I'm not alone in it. We have a nice, little, very modest international community, so there's a lovely group of people that are also doing a similar thing.

But I had a very vivid moment when I started getting my first examinations for grad school where you show people your work in progress to a committee. I remember very vividly there was a woman who was one of the top neuroscientists working at Oxford, and she was one of the people on the committee. And I do a presentation, do a couple of coin tricks that were related to the work, and there was just dead silence in the room. Long pause. And she just looks at me and she's like, "That was," another long pause, "unconventional." It's a nice tagline actually, and it turned out okay.

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You mentioned in terms of the applicability, things like how you can relate these things to... Well, so this is... To be very clear, I'm not a clinician, and this is several steps removed from any kind of direct clinical application. But the idea of doing basic research into how people see things, and in a sense, more importantly, how people think about the way that they see things, I do think has profound implications for a lot of applied problems, including things like mental health.

One of the things that I've worked in in terms of study and illusory experiences, for example, is the idea that hallucinations and different kinds of really profound multimodal vivid hallucinatory experiences are actually very common, potentially, in day-to-day life of psychiatrically normal people that aren't necessarily on drugs. And there's a big stigma attached with weird, anomalous perceptual experiences which is not necessarily warranted, which isn't to say that hallucinations aren't related to psychiatric situations, but they aren't necessarily in all situations.

Roger Dooley: Yeah. Well, you know, I think the attentional blindness thing is interesting. If we think about the way people might look at, say, an advertisement or piece of content, there's similarity there, where the people that design it can see exactly what to do. If there is an action that's supposed to be taken, a buy button, or a continue, or there's something else, it's obvious. They are never not going to see that, and sometimes it's hard for them to understand that there's other stuff that might be going on on that page or in that video or whatever that might be distracting, and even though it appears to be obvious, that people just aren't seeing what they're supposed to do.

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Matt Tompkins: Yeah, absolutely. This is back to this idea of metacognition, where it's "Of course, people would see that." You get this intuitive sense of your own visual experience, which doesn't necessarily line up when you actually empirically measure what's happening.

Roger Dooley: Yeah. That's why you should never test your own website or analyze your customer's behavior from your viewpoint. Once you've seen the gorilla video, you're not going to unsee it, and really, I think the same thing applies.

But I want to get on to your book, Matt. It's really great. The Spectacle of Illusion is one of those books that an audio podcast doesn't really do justice to. It's a visual feast. It's packed with color, images of magic posters from earlier centuries, and historic photos, photos of what people thought were real phenomena, like humans levitating and spirit photos, disembodied heads, even some optical illusions. Matt, it's not shaped like a big-format coffee table book, but really inside it's every bit as gorgeous, and I want to congratulate you on that.

Matt Tompkins: Thank you.

Roger Dooley: Of course, there's a lot of thoughtful text in there too.

Matt Tompkins: Thank you. One of the lines from the endorsements is "Even if you don't read a word, it's still kind of fun to have." Yeah. No, it's a fantastic-

Roger Dooley: Ignore that type in there. Well, actually that might illustrate the whole point right there. People are so busy looking at the pictures, oh, there was texts in there? Who knew?

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Matt Tompkins: Results for me at the end of the day royalties-wise. But no, I would love people to read it.

Roger Dooley: Yeah. No, and actually the text is very thoughtful. How did the idea for the book evolve, Matt?

Matt Tompkins: The idea for the book evolved as this was part of an exhibition that's actually currently ongoing in London. I'm not sure if you're aware. The Wellcome Trust is currently doing a large exhibit for the general public, which if you've got any London or UK-based listeners, is absolutely free. You can walk in five days a week and peruse. If you're interested in some of the objects in the book, you can see a lot of them in the flesh at the Wellcome exhibition in Euston in London.

I was initially approached a few years ago by the curators that were starting to put together this idea of trying to put something into the history of magic and psychology and the interplay between those two things. I was approached by this because that was pretty much exactly what my doctoral work had been in is the idea of... Part of it was looking at things like the gorilla video, but also looking at how that echoes backwards in time, different ideas about very surprising studies in cognitive psychology and how that had been potentially overlooked or explored by past researchers in ways we don't talk about anymore. And magic is a really interesting space for that.

Like I said, there is a small community of us, so I met the curators a few years back. Particularly, there were two people that worked on that exhibition that have been fantastic, A.R. Hopwood, who's a fine artist, who does some curation, who did some beautiful work with this and

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was really wonderful to collaborate with, and Honor Beddard, who was another curator at the Wellcome who did great work with this. They had initially approached me to write an accompanying text, which was fantastic timing for me because, in the process of writing my thesis, there were a number of things that I came across that were, in effect, a bit too weird for a conventional empirical psychology thesis.

My thesis was still extraordinarily strange and grated some of the examiners in interesting ways, but that one was the one that was a very curated version of the things that I had left over, different stories that I thought were really beautiful stories of people exploring, like you said, this idea of the spirit photography, how you could have these folks that were exploring different kinds of empirical investigation, these battles of different truth and lies between investigators and scientists and magicians and people who would claim to be genuine mystics, and it was all really tied up with the origins of experimental psychology.

A lot of the book focuses, in the initial stages, around the turn of the 20th century, which is an interesting time period for I guess three kind of interwoven stories. One is this idea from the magic community where you've got the emergence and the popularization of what we would now call modern magic, which was set up by this guy named Robert Houdin. Forgive my horrible American attempt at pronouncing French things. Most people have kind of heard of him. Does that ring a bell at all to you, Robert Houdin?

Roger Dooley: I'm guessing that he changed his name professionally.

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Matt Tompkins: Not quite. The reason most people have kind of heard of him is that Harry Houdini adopted his stage name in honor of Robert Houdin. One of Houdini's first magic books as a child-

Roger Dooley: It was an homage.

Matt Tompkins: Yeah. As a child, he read Houdin's books. Houdin was a prolific author, and he would not only write down methodologies for some beautiful, elaborate stage illusions, he started out life working as a professional watchmaker, so beautiful mechanical automaton, different apparatus, and some very brilliant illusion ideas, but he wrote a lot about the philosophy of performing.

He's got a particular line that has a lot of resonance for me and for many, many people that do things that I do and things adjacent to what I do. What he famously said, again translating, is "A magician," he would write, "is just an actor, but he's an actor or she's an actor who's playing the role of a magician." There was this idea, this understanding between the audience and the performer, that if you're seeing impossible things, if you're seeing things that seem supernatural, they're not really things that are outside the realm of normal science or reality. You're seeing a trick, you're seeing an illusion, and it's produced skillfully, but not by a guy that has actual superpowers.

There was this tacit understanding which was different from some of the people that, arguably, emerged from things like the spiritualist movement, who were performing feats that looked a lot like magic tricks, but they would say these aren't really magic tricks, it's not a trick, it's not an

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illusion; what you're seeing is real. I'm genuinely, for example, conversing with a dead person, or I'm manifesting a ghost.

That led to tension with the magicians, who wanted to see themselves as kind of honest deceivers who would sometimes go out of their way to debunk these folks very publicly as a little bit of self-promotion, and also they would sometimes see it as a public service. You see people like Houdini was very well-known for doing this, folks in England like John Neville Maskelyne, and later on you see folks like James Randi in the modern era, or even Penn & Teller have done a bit of this contemporarily.

At the same time, while those two groups are going at it, on the fringes and sometimes getting directly involved are the natural scientists, who want to look at testing these claims. You see psychology starting to emerge from this because there was an argument that, at least when spiritualists started making their claims, and this is the idea again, one way of looking at this, one facet of this is that in a sense people are being presented with empirical religious miracles, this idea that, sure, you can go to church and hear stories and people can tell you to have faith, or we can put you in touch with the dead person who can describe the afterlife to you from a first-person perspective, can be potentially powerful stuff.

But the natural scientists were saying, if these are empirical claims, then we should be the ones that are assessing them, because as a scientist, they're trained in empirical observation. But the issue that would sometimes arise with this, and this is an ongoing thing that wasn't limited to the turn of the 20th century, is that if

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you're trained in empirical observation, you're not necessarily trained in dealing with the kind of variables that come into play when you start dealing with human subjects.

To put it one way, if you're a natural scientist who's a microscopist, who's very trained at dealing with a microscope or something, you're very good at dealing with your scientific equipment, but when you start introducing people to that equation, if you're going to bring a medium into a laboratory and start testing him using similar parallel methodologies, a potential difference between a medium and, say, a microscope is that the medium has different motivations. The microscope, for example, is not going to be motivated to lie to you in exchange for fun and profit in the way that a medium might be, and so-

Roger Dooley: Right. Hence, some of the early experiments that appeared to show that ESP was real, but in fact, these were, not gullible scientists perhaps, but just scientists who weren't really prepared to control all the possible conditions that would prevent cheating.

Matt Tompkins: Yeah. This was one of the things is they were doing absolutely the best they could with what, at the time, was a relatively limited toolkit. They were pretty much making up the methodologies as they went along. And there were definitely some growing pains. ESP, like you say, is one that I think, arguably, most conventional scientists would say that we do not have empirical evidence for any kind of sixth sense or being able to, say, see the future. Still a little bit of controversy about that on the fringes, and there's some interesting debates happening there, but I

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think overall when you drill down to that, it comes down to issues of deception and self-deception a lot of the time.

For me, the work that I'm most interested in is the work around, specifically, the deception and the self-deception. People like me that do things that are called... the terminology, which is a little bit obscure, but if you're interested in this stuff, it's quite fascinating... what you would call anomalistic psychology is concerned with this idea of looking not necessarily at the truth or falsity of paranormal claims, but how you can experience things that seem to be paranormal experiences using normal psychological methods.

Roger Dooley: A while back I wrote a blog post about... I called it Six Selling Secrets From Magicians, and a lot of it had to do with driving attention and how in different contexts for sales or marketing that those techniques could be used. We've talked about attention already with the invisible gorilla thing, but how much of what magicians do is driven by attention or is related to attention?

Matt Tompkins: It's a bit messy because once you start trying to operationally define magic, it gets very difficult very quickly. I would say that attentional components absolutely play a role in quite a bit of sleight of hand, in particular, in some cases with larger-scale illusion work.

There was an interesting line by one of the early psychologists. One of the first people to actually try and study magicians empirically in a laboratory and look at particular kinds of techniques was actually some guy that a lot of people may have heard of, Alfred Binet, who's best known for the IQ test. He brought magicians into the

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laboratory, did a little bit of early preliminary work, and what he wound up saying was that trying to test the psychological principles underpinning a magic trick, even just a simple bit of sleight of hand like making a little ball disappear with your hands, was almost as difficult as trying to count the number of grains of sand seashore, which I think is a little bit pessimistic as someone who does try and count those sand grains for a living.

Roger Dooley: Right. What did he find so difficult about it?

Matt Tompkins: Is that there are many, many methodological factors that go into crafting an illusory experience for someone. When a magician creates an effect, you can get... You've seen this a little bit throughout history sometimes. The psychologists will kind of freshly discover the idea of looking at magic tricks, and they'll try and reduce the concept of magic down to something very, very simple.

Attention, like you said, is absolutely one component that underlies a lot of magic tricks, but oftentimes when you start trying to adapt these things into real-world settings, there are many, many factors with the dynamics between the performer and the spectator that will also come into play. But attention is definitely a very significant factor.

Roger Dooley: One of the pieces of information in the book that kind of surprised me was eye tracking. That's a technique that a lot of our listeners will be familiar with, to see exactly where a person is looking when they're, say, viewing a video, viewing an ad, or whatever. We think of, or I at least, I think of magic as being one of diverting the attention from what's going on; a magician is making a big

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bold move with his right hand while his left hand is slipping something into his pocket or something like that.

There's eye-tracking data that showed people could be looking right at what they were not supposed to see, and they still didn't see it. How did that work? That seems impossible, but maybe it's like the invisible gorilla.

Matt Tompkins: Very similar. That study was conducted by... The head researcher on that was a gentleman who was actually one of the examiners on my thesis, a guy named Gustav Kuhn, who is currently working at Goldsmiths University. What he was doing is he was effectively designing a magic trick that was a sleight of hand equivalent to the invisible gorilla experiment.

In a sense, and this is a little bit controversial with magicians in some circles, because what he effectively did is, for an experimental paradigm, he designed what was kind of, in performance terms, a garbage magic trick. He designed a magic trick where you could see very clearly people were capable of seeing the method. So this would not be something that someone would use in a professional set, not really, where he's doing a simple sleight of hand move, the classic thing where he's retaining... He was using a cigarette lighter, and he's retaining the lighter in one hand and appearing to take it in the other. That's that large action that you talked about was the hands coming together.

He looks as if he's taken it in one hand. It's secretly in the hand that it starts out in the whole time. What he does is he makes it disappear, and the way that he does this is just by literally... He's sitting at a table, and he openly

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drops it in plain view into his lap. Again, that's not something anyone would do under normal professional circumstances.

But what he found was if people were watching that larger action, like you said, and they're also watching where his gaze was looking, so he was watching where the lighter wasn't, they would still fail to detect that lighter change a lot of the time when it was happening right in front of their eyes.

And like you said, additionally, they followed it up by looking at eye-tracking measurements. They wanted to see precisely where people's gaze was going in the scene. And what they showed was, and this has been shown in some cases with the gorilla videos as well, is that people could be looking right directly at it, so their gaze would be fixed on the thing that they're still blind to. People would watch the lighter drop off the table. You can see from the camera that their eyes were physically on the part of the screen where they could see the lighter dropping. And if you talk to them, they'd be like, "I have no idea where it went. It's impossible. It should have been in his hand."

You get this dissociation between where people's gazes are and where their awareness is in the scene. It shows us that eye tracking doesn't necessarily measure exactly what you think it measures all of the time because there's this dissociation between the gaze position and the awareness, which, again, is just... It can be weirder than people tend to imagine, which is an overarching theme of my work.

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Roger Dooley: Right. Okay, that's a little bit of a cautionary note for those folks out there who are relying on eye-tracking data.

Matt Tompkins: Not that it's not a great tool; it's just, you know, caution.

Roger Dooley: Right, as with many things, I guess.

There was another one I found. We talk a lot about brain scanning, and there's actually an experiment with a fake brain scanner that was used for a kind of mind control.

Matt Tompkins: Yeah, this is brilliant. This is a team led by a Jay Olson, who's working at McGill University. This is a beautiful piece. He used to work professionally as a magician as well, similar kind of arc. There is a few of us, like I said, throughout the world. He designed this beautiful theatricality around this whole experiment, which I get a big kick out of.

The way that this works is that they're looking at what is effectively placebo effects, so this idea of how... The classical thing is this idea, if you give people a sugar pill and tell them it's this medicine, that will make them feel better. By and large, it tends to. So what they would do is they were using pretty much a giant machine in that same kind of sense.

They had what was a dummy fMRI scanner, and this is just, if you've ever had an fMRI or if you've ever seen the machine, just this big, giant thing, but it's just a shell and a noisemaker, none of the fancy, incredibly expensive magnets or really high-quality hardware.

Roger Dooley: A lot cheaper than the real thing.

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Matt Tompkins: Yeah, absolutely. Hospitals do have these, because the idea is, particularly for children, if you want to get them, because you need to be very still, you can use these as dress rehearsals for actual scanners. That way, you're not spending, because it costs quite a bit of money to use these things to get the-

Roger Dooley: Right. Yeah, the hourly rate for those things is off the charts.

Matt Tompkins: Tell me about it, trying to get the...

What you can do with the dummy things traditionally is you can get, say, a child that needs to stay still, you can help them learn what it feels like in the scanner before you actually need to spin the thing up for real. That's why the hospital had one.

But what he did is he brought people into the scanner, and he would describe different magical things that the scanner couldn't actually do. The experiment was based around deception. One of his first things that he did that's quite fun is he said that the scanner could insert thoughts into your mind. What they would do is they would sit in a scanner and he would say, "Try and think of a number, and I'm going to try and use the machine to influence the number that you're thinking of." So they would sit in the scanner for a bit, and then they would come out of the scanner and he would ask them what number they were thinking of, and he'd be holding a clipboard. They would tell him what number they were thinking of, and he would use a magic trick to make it look as if he knew in advance the number that they were thinking of.

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I'm not going to get too spoiler-y with it. Very much it was not actual thought insertion. He was using a very classic mentalism magic trick in a place that people were absolutely not expecting him to, because, again, there's a whole theater. They're bringing him into a hospital. The experimenter is wearing a lab coat. It's not a magic show.

What people would say after he showed them that he'd apparently sent that number to them is they would confabulate situations of what they felt in the machine, that they would feel the machine influencing them. They said that they would have memories of that happening, which they couldn't really have because the machine didn't do anything. It was a noisemaker. But people would still have these very, very vivid experiences based on this kind of theater of it.

Roger Dooley: Right. Well, it's actually pretty believable, Matt, because for years... People started talking about neuromarketing more than 15 years ago. But one of the kind of frightening things was people would see these images of people with either a full EEG cap with a million wires coming out of it, or people going into an fMRI machine with their head locked into a stabilizing device. And even though nobody was saying that this is going to control your mind, there was this sort of fear that, wow, this is really scary; that might be what they're doing. I think people are predisposed somewhat to believing that it's possible.

Matt Tompkins: It's an interesting space these days. I'm sure you run into a lot of dodgier research in the course of your doing business, but for me, as someone who studies a bit of the history of the interplay between fraud and science, the neuro stuff is really interesting. Using that as a tag,

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especially in a marketing context, is if you say something is neuroscience based, and you show pictures of brain scans or you show somebody in a cap or you show people a scanner, it's a great way of legitimizing things that might not necessarily be legitimate.

If you want to run a con on someone, one of the best ways of doing it, just in the way that back at the turn of the 20th century you would say it's the power of magnetism or the power of ether, nowadays the new, exciting thing is to tell people this bleeding-edge science that people don't quite understand all the time and are quite scary, and it's quite unpredictable, in reality, what we're going to come up with next, are things like neuroscience or quantum mechanics.

If you want to spin something and you want to make it sound very believable, there are many worse ways to start running a scientific con than starting talking about the qualities of the neuroscience or the qualities of life, the quantum mechanics of the thing that you want to pitch to people. So it's an interesting space.

Roger Dooley: Yeah. Today, maybe instead of finding a wallet with cash in it to start your con, you find a USB drive with the blockchain and coding on it.

Matt Tompkins: Absolutely. Yeah.

Roger Dooley: I hope I didn't give anybody any ideas there.

Matt Tompkins: Well, that is a classic pen testing thing, right? Where people want to try and break in, you just write something interesting on a sticker and you sprinkle the USB sticks around, and it doesn't matter how good your software is. If

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a random employee finds the thing that looks interesting and plugs it into their work machine, it doesn't matter how good your other security mechanisms are. If you get the human, you're all set.

Roger Dooley: Right. Yeah. Matt, I assume you're sensitized to seeing illusion around you. I'm curious whether, outside the confines of your professional work in magic shows and such, if you see either businesses or people using techniques that you say, "Well, that's kind of related to what I do."

Matt Tompkins: To a degree. One of the things that's kind of interesting about doing the kind of work that I do, particularly in the realm of things like attention... You had mentioned the gorilla, for example, not to... It's an interesting thing to just keep blinking back to... is that even understanding about that gorilla video doesn't make me any more likely to see gorillas, these unexpected things, in other contexts.

The main thing that I've learned from this is my own fallibility. The metacognitive thing that I've taken away from it is that I know that I am capable of being deceived, especially on an attentional and perceptual level. I think it's quite tricky to study these things and actually come away with being better at noticing something or being more likely to have a different, more accurate perceptual experience. But it has taught me to put the right amount of humility and faith where it's warranted, and lack of faith where it's warranted, in my perceptual experiences.

Yeah. No, it's quite interesting with the contemporary stuff. You mentioned, for example, with things like web design, where you get these conversations with folks

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where they say, "Well, we know the user will see it because we designed it in a very obvious way." And again, with that stuff, unless you start testing it on people who are naive participants, it's very, very difficult to intuit what a visual experience is going to be.

I see this in the user interface design kinds of things. The other place that this comes up very classically in applied psychology contexts are things like legal situations, where you get people... At least, in the UK there's a bit of attention... I know some people that work as expert witnesses on the concept of memory and the concept of perceptual experiences. And there's a pushback there that I think has really strong parallels with applied marketing sorts of things potentially, where people will say, "Well, we don't need a legal expert in this context because everyone sees things all the time; everyone remembers things all the time. We're all effectively experts in our own cognitive systems because we use them more or less effectively all the time in our day-to-day life."

Again, like I said, the truth is often significantly weirder than that. Again, I'm not saying that people are blind or stupid or bad at perceiving the world around them, but I am saying that the cognitive system, which can be very adaptive under most circumstances, doesn't necessarily work the way that people will think that it does. Again, even visual scientists, like I said, the original invisible gorilla kind of idea didn't catch on with people that were professionally trained as visual scientists because it was so weird that they thought it was broken.

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Absolutely these kinds of things can come into play, unless you test them in a controlled way. That's the way to get around that. The scientific method is not a perfect tool, but it's one of the best tools to approach these kind of issues of illusion versus reality.

Roger Dooley: Right. I think the point you made about naive participants is really important. That's who's going to show the flaws, or at least show up what you might not expect.

One last question, Matt. When you travel, do you carry any magic props with you in case you've got a bored child sitting behind you kicking the back of your seat?

Matt Tompkins: I've got an old habit of carrying little coins around with me. Like I said, one of my first books was that old Bobo book, so the coins serve me quite well. I used that in interviews to get my doctoral position. There were other bits that went into that, but part of it was coin tricks. That was part of my first peer-reviewed paper was doing different kinds of adapting sleight-of-hand coin tricks into psychological research.

I usually carry around... I've got a couple of things. I've got an old Morgan dollar. And one thing I'm quite proud of is I've got a counterfeit P.T. Barnum commemorative coin, one with Barnum, the old showman/con artist. Yeah, he was mayor of Connecticut for a while, and they do genuinely have a coin that was a commemorative half dollar of him, but I have a fake one.

Roger Dooley: Which somehow that seems appropriate for the context.

Matt Tompkins: Yeah, I was quite pleased about it.

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Roger Dooley: Okay. I will remind our listeners that today we are speaking with Matt Tompkins, author of the spectacular new book *The Spectacle Of Illusion*. Matt, how can people find you and your work?

Matt Tompkins: Easiest thing is online. It's at [matt-tompkins.com](http://matt-tompkins.com). That's M-A-T-T, dash, T-O-M-P-K-I-N-S. I suspect these links will hopefully be on your podcast site. And if you're looking for the book, it's [matt-tompkins.com/soi](http://matt-tompkins.com/soi), for *The Spectacle Of Illusion*, just the initials there.

Additionally, if you're interested in this kind of thing more generally, I'm part of an interdisciplinary organization called The Science of Magic Association, where what we do is, like I said, it's a small international research community and we look at bringing together magicians, performers, we've got a few people in marketing, and looking at applied problems you can bring by adapting magic tricks into empirical methodologies. If you're interested in that kind of thing generally, that's [scienceofmagicassoc.org](http://scienceofmagicassoc.org), which is also on my website.

Roger Dooley: Great. Well, we will link to those places, and to the book of course, and any other resources we talked about on the show notes page at [rogerdooley.com/podcast](http://rogerdooley.com/podcast), and we'll have a text version of our conversation there too. Matt, thanks for being on the show.

Matt Tompkins: Thanks very much for having me, Roger.

Thank you for tuning into this episode of Brainfluence. To find more episodes like this one, and to access all of Roger's online writing and resources, the best starting point is [RogerDooley.com](http://RogerDooley.com).

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