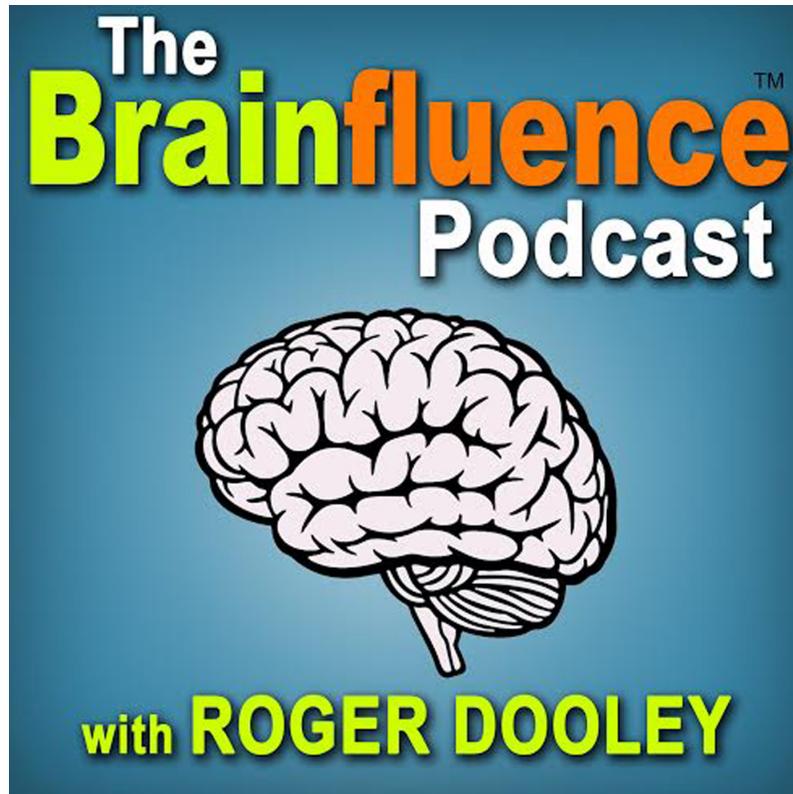


Ep #2: The Psychology of Habit-Forming  
Technologies with Nir Eyal



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**Roger Dooley**

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## Ep #2: The Psychology of Habit-Forming Technologies with Nir Eyal

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: This is the Brainfluence Podcast, and I'm Roger Dooley. Today, we have Nir Eyal, who's the author of *Hooked*, a really fascinating book about building habit-forming products. Nir, why don't you start off by telling everyone a little bit about what it is that you do?

Nir: Sure. Thanks for having me, Roger. It's a real pleasure to be here to speak with your audience. I have a background in startups. I've started two companies, and thankfully, both were acquired. After my last company was acquired, I decided to take some time and look at what I wanted to do next. In that period of time, I came up with this hypothesis that the future of the technology products we use will be highly dependent on the habits we formed.

About two and a half years ago, I decided to dive into what is it that helps people build habits through technologies. I started studying the usual suspects of products that somehow, within a five- to ten-year span, are touching hundreds of millions of people, if not billions of people, and many of them making hundreds of millions if not billions of dollars. I started studying Facebook, and Twitter, and Instagram, and Pinterest, and Snapchat, and these companies that seemingly come out of nowhere as toys. Many times they're dismissed. Yet, within a few short years, they have a massive impact on people's day-to-day behaviors.

[The Brainfluence Podcast](#) with Roger Dooley

## Ep #2: The Psychology of Habit-Forming Technologies with Nir Eyal

That's been really the core of my study over the past several years. I just recently put all of what I learned into a book called *Hooked: How to Form Habit-Forming Products*, which you mentioned. That's been my work to date.

Roger: Right. The book has really been a great eye-opener for me, as I wasn't even finished with it, and I was already starting to share some of the stuff in it with the people that I work with who are involved in either building web products or websites and depend on repeat traffic. Some really good stuff in there. You've explained a little bit about the evolution of the hook model. I guess probably a good way to begin would be to explain the various components of the hook model, the four quadrants.

Nir: Sure. What I discovered in studying these products is that there's this same basic four-step process that users go through, this experience that connects the users' problem to the solution by walking users through these four steps. These four steps are, first, a trigger, an action, a reward ... and that's typically a variable reward ... and then finally an investment. By shuttling users through these four steps, this is how technologies form habits. This is how they create associations with pain points in users' lives so that every time a user experiences what I call an internal trigger, the solution to that discomfort is found in the product's use, in the technology, so that they're inextricably linked between this emotion, this feeling, this internal trigger, and the satisfaction that comes from using the product.

It's through these four phases that I see time and time again, not only in consumer web, but also when it comes to enterprise products, anything that requires what I call unprompted user engagement. You've probably felt the feeling of, somehow you're using your phone to check email or check Twitter, and

[The Brainfluence Podcast](#) with Roger Dooley

## Ep #2: The Psychology of Habit-Forming Technologies with Nir Eyal

you're not really thinking ... "I didn't intend to necessarily do that, but somehow I find myself doing these behaviors." That's really the core of my study.

To be clear, not every business requires habit formation. Plenty of companies have great businesses and do a lot of good to their customers without necessarily forming habits, but my focus is really on those products, similar to the companies I mentioned before, that couldn't be in business, their business models wouldn't survive, without these unprompted user engagements, without habits.

Roger: Right. You make a good point. A lot of the writing that I do is focused on conversion, which is not a dissimilar thing, except it tends to be a one-time event. Obviously, you can have repeat customers, and that's a good thing, but it's not really a habit thing so much as a one-time event that, if it goes well, may get repeated in the future.

Looking at the first of the steps, the trigger, now initially, that has to be external, right? When an application or a product is new, it's not part of the user's life. They may not even know what it is. How do you get the whole thing going?

Nir: Exactly, yeah. There's two types of triggers. As you mentioned, one is an external trigger, and the other is an internal trigger. The external trigger is where we start, that if a customer or a user doesn't know about the product, doesn't know about the experience, it always has to begin with some sort of external trigger. External triggers need to be used for a long period of time to get users into these four steps of the hook model, to make sure they pass through the hook.

## Ep #2: The Psychology of Habit-Forming Technologies with Nir Eyal

An external trigger is defined as anything that cues action where the information for what to do next is in the trigger itself. A button online that says “click here,” or “tweet this,” or “buy now,” those are all examples of external triggers. In the physical world, a billboard, or a police officer telling you which way to drive and directing traffic, or even a word of mouth, a friend telling you about an app you should install, all of these things are examples of external triggers. There are things that are environment that tell us what to do next, as opposed to an internal trigger.

Internal trigger, these things aren't to be created. They're to be found. All of us have these internal triggers, these situations, places, routines, even people, and, most frequent, emotions, that direct what we do next. There isn't necessarily information in those internal triggers that tells us what to do. Yet, over time, we've created associations that inform the next behavior. Unlike the external trigger, which tells us what to do next ... the information is in the trigger ... these internal triggers are things in our day-to-day lives that, just as reliably, cue our next action. In order to cue that next action, there needs to be an association.

Roger: Nir, when the trigger happens initially, particularly that external trigger when somebody is new to a product or an application, one of the things that has to be true is that the user experience has to be really good. It has to be very simple to accomplish that action, right? Would you say that's a differentiating factor between apps or websites or products that don't make it and those that do?

Nir: Absolutely. That leads, actually, to the second part of the hook model, which is the action phase. The action phase can really be defined as the simplest behavior in anticipation of reward,

[The Brainfluence Podcast](#) with Roger Dooley

## Ep #2: The Psychology of Habit-Forming Technologies with Nir Eyal

the simplest thing the user can do. Some good examples might be, on Pinterest, just that act of scrolling through a Pinterest page. In fact, I dare you not to scroll. It's so simple to do to get to that reward immediately. All it takes is just a quick flick of the mouse or the finger. Searching on Google, that's an extremely easy action in anticipation of reward, or pushing play on YouTube, another example of a simple action in anticipation of reward. That simplicity is a huge factor of increasing the likelihood of a behavior occurring.

I draw on the work of B.J. Fogg. He has a great model that I think is simple enough to be useful in a product development context, where basically he says that to predict a behavior B, you need these three factors of M, A, and T. You need motivation, ability, and a trigger. B equals MAT. A lot of folks now in the design community have heard his work. That's really the principle that I use to help my consulting clients and help my readers understand how can we increase the likelihood of a behavior by making sure we have sufficient motivation, that the behavior is easy enough to do through increasing ability, and that, of course, a trigger is present. We need all three factors to have that behavior occur.

Roger: Yeah, the Fogg behavior model is really a useful tool. For folks who aren't familiar with it, I'd recommend they check it out. It was certainly the basis for part of my persuasion slide model. I had a chance to meet B.J. at a conference in San Francisco, and hearing him was definitely formative in my thinking about the persuasion and conversion process.

Then, there's the reward. Talk about the reward. What can they be? Why is it a good thing that they're variable? It seems intuitive that, well, a reward should be consistent. In other words, if you get a reward one time and don't get it another

[The Brainfluence Podcast](#) with Roger Dooley

## Ep #2: The Psychology of Habit-Forming Technologies with Nir Eyal

time, you won't necessarily want to perform that action again. Actually, the reverse is true, isn't it?

Nir: That's right. That's counterintuitive, you're right, that actually sometimes consistency can be your enemy, in a way, when it comes to designing these experiences, because what I revealed in my research is that these products that we find most engaging, most habit-forming, the ones that grab our attention, not just online but even in offline applications, things that hold on to our focus and attention, these things, time and time again, have an element of variability. They have an element of mystery.

It turns out that our brain's reward system runs not just on pleasure ... that's of course part of the response ... but really what motivates us to action is this stress of desire, this wanting reflex, craving. That's what really drives our action. This is actually fairly, within the past few decades, something that neuroscience has revealed, that it's really around this anticipatory response. It turns out that variability spikes that response. That's a big part of what creates the itch that needs scratching, so to speak, is through these variable rewards.

Many of your listeners might, of course, recall the work of B.F. Skinner, the father of operant conditioning, who, in the 1950s, studied the response of variable reinforcement. He found that when he took his pigeons and he put them in what's now known as a Skinner box, and he allowed the pigeons to click on a little disc, and when the food pellet was received on a predictable basis, basically, the pigeons would eat whenever they were hungry. When Skinner did something a little different, when he added some variability ... so the pigeon would click on the disc, sometimes a food pellet would come out, sometimes it wouldn't

## Ep #2: The Psychology of Habit-Forming Technologies with Nir Eyal

... the rate of response increased. The number of times that Skinner observed the behavior went up.

What we find is endemic to habit-forming technologies is that time and time again, they utilize one or more of these three basic variable reward types. I call these rewards of the tribe, rewards of the hunt, and rewards of the self. By using one or more of these variable reward types, this is what creates this mystery, this desire to see what's going to be behind the experience, and entices the user to keep checking in, to go through the model again in the future.

Roger: Social media is great for that, I guess, because social media results are always unpredictable. If I post something on Facebook, if the same five people liked it every time, that wouldn't be particularly motivating after a while. Seeing, "Gee, nobody liked the thing I posted today, but the thing I posted yesterday, 47 people liked it," so that makes me want to try again to get back to that 47, I guess.

Nir: Exactly, or just even opening an app like Twitter or Facebook. There's a high degree of mystery of what your friends will put on your newsfeed. What did they post? How many people liked it? What are the comments going to say? There's a very high degree of variability when it comes to using a social media product. That's a great example of rewards of the tribe, these things that feel good, that have an element of variability, and come from the people in our lives.

Roger: While we're on the subject of rewards, let's talk about gamification a little bit. I know I've been involved in forum communities for many, many years. Before Facebook existed, online forums were the primary kind of community that was out there.

## Ep #2: The Psychology of Habit-Forming Technologies with Nir Eyal

One of the things as a forum operator that you could see is people's behavior changed with even these silly little membership levels, like when you transition from new member to regular member, or regular member to senior member, which was absolutely meaningless. It was a tiny line of type under the person's name. There was absolutely no reason logically for people to care about that. You could see, as people got close to the next level, they would step up their posting activity, sometimes in a silly way where they just put up a bunch of very brief responses in order to get their account up. I suppose maybe there's some goal-gradient hypothesis we're going on there, too.

The interesting thing was that this was the pre-gamification gamification, where as simple as this little reward was and as meaningless as it was, it nevertheless did influence the behavior of many of the community members. Now you've got these tools like Badgeville and other things out there that have more explicit forms of gamification. Do you think that is a good thing? Is this a fad, or is it going to be a longer-term part of just about every app or website?

Nir: Yeah. I wish the term gamification hadn't caught on, because I think it has this connotation that you can take something bad that's not fun, and all of a sudden make it fun by using gaming elements in traditionally contexts that don't use gaming. I think that's maybe stretching it a little too far, because I think putting variable rewards and putting game elements into an experience has to scratch the user's itch.

If the user's itch, if the internal trigger is, let's say, boredom, then the variable reward has to be entertaining. It has to reward the user in the context of what they came for. If the internal trigger is loneliness, then it has to be a social reward. In some

[The Brainfluence Podcast](#) with Roger Dooley

## Ep #2: The Psychology of Habit-Forming Technologies with Nir Eyal

respects, using game elements, or what Sebastian Deterding calls gameful design, I like that term a lot better, because that actually does express what I think the goal of gamification is, which is to give the user what they came for, to give the user an experience that they enjoy and that helps them add to the experience.

If it's an experience that is around scratching this itch of loneliness, then I think some gaming elements that have a social component and help people connect to each other, that's used very well. I think that's a beautiful application of these type of elements. Where I see gamification fall down is where there's experiences where the reward doesn't match the internal trigger, where there's a disconnect between the reason the user comes to the experience, the itch, and the way that itch is scratched. If putting points and badges and leaderboards doesn't help the user address the reason they came to use the product in the first place, then I think this is where we see it go wrong.

Roger: Right. Maybe the better term would be rewardification, and those rewards have to be meaningful. I use a weather app on my phone or iPad, and I've accumulated some 60-odd rewards or something. I've seen this little indicator there. There's a little gift thing. I have absolutely no idea what they are. I've never clicked that. It's never interested me enough to actually click to see what things I was getting. I'm sure it's things like, "You've checked the forecast twice in one day, and you unlocked that badge," stuff that really has very little meaning.

Where, in a community, being recognized as a valued contributor ... for instance, being on the leaderboard for most helpful member list ... that's something that really conveys meaning to people, particularly if they are there to share their

[The Brainfluence Podcast](#) with Roger Dooley

## Ep #2: The Psychology of Habit-Forming Technologies with Nir Eyal

knowledge. I think you really hit the nail on the head. The rewards have to, in some way, relate to the meaning of why they're there. That's where a lot of gamification things fail, where they celebrate meaningless achievements.

Nir: That's right. That's right. That's a perfect example. On your weather app, the internal trigger there is uncertainty. The internal trigger of "why should I check the weather" is uncertainty about what I should wear for the day, what's my day going to look like. Popping on this variable reward of a social reward, and how much more you've checked the app than somebody else, that's not meaningful. That doesn't actually scratch the itch. Whereas, maybe if the internal trigger was a social type of internal trigger, then it might work.

For example, on Stack Overflow ... it's the world's largest technical question-and-answer site ... there's points, and there's badges. They work very well, because these points and badges aren't decorative in nature. That's not what they're about. They're about a way to convey how valuable you've been to the people whose opinions you care about, your tribe, fellow engineers. In that context, they're incredibly powerful, because that's a reward that these people really care about, how valuable your opinion has been to the people whose opinions you care about.

Roger: We got off the track there and delved into rewards more. The final phase is the investment phase. To me, I found that a little bit counterintuitive too, because up to that point, the whole thing was about how easy the app or product or site, or whatever, was to use and how little friction there was in the process. Then the final phase is actually saying, "Okay, people have to work a little bit to really become hooked."

## Ep #2: The Psychology of Habit-Forming Technologies with Nir Eyal

Nir: Yeah, absolutely. I think you're absolutely right that there's a golden calf in the design community, in the user experience community, that everything has to be easy to use. When a customer uses our product, it has to be slick and seamless. Isn't that what I just told you to do in the action phase? It's all about making the behavior easier.

I actually think that the opposite is true in a particular time and place. That time and place is in the investment phase. It's all about the order of these things. In the action phase, I contend that you do have to make the behavior as simple as possible in anticipation of the reward. If you just do that and just reward the user, and that's it, you won't actually create a habit-forming product. That to create a habit-forming technology, what you've done by doing those three steps, if you just stop short at a reward, is you've created a feedback loop.

That's not good enough. We have to create a way to bring the user back. The habit-forming technologies that I studied, time and time again, had some kind of work that the user did after the reward ... not before, but after the reward ... which brought them back to the experience in two ways. The first way is by loading the next trigger. There is some bit of work, something that brings the user back.

Let's take email, or WhatsApp has been in the news lately. Let's talk about WhatsApp. When you send a message using WhatsApp, there's no immediate gratification. There's no immediate reward. You don't get badges. You don't get points. Nothing really happens. What happens is that when you send that message, you're anticipating there will be a future response from someone you sent the message to. Then you'll get a little jewel on your icon that says, "Hey, someone wrote you back." That is an example of loading the next trigger. You

[The Brainfluence Podcast](#) with Roger Dooley

## Ep #2: The Psychology of Habit-Forming Technologies with Nir Eyal

become more likely to go through the four steps of the hook when you send out that message in the investment phase.

The second example of a way that investments increase the likelihood of the next pass is through stored value. One of the reasons I love working in technology is that, unlike things in the physical world, technology products that are made out of bits as opposed to atoms, technology products that are habit-forming, should appreciate over time. The things in the physical world depreciate. My phone, laptops, chairs, tables, all of these things in the physical world depreciate with use. They get less and less valuable with time. Habit-forming technology should appreciate in value, because the more it's used, the more valuable it becomes.

This comes in a few ways. By putting data into a product, content, accruing followers, or a reputation, all of these things are forms of stored value that the more I use the product, the more likely I am to use it in the future. Those are the two ways that investments increase the likelihood of the next pass through the hook.

Roger: Interesting. There's a theory about luxury products that they can't be too easy to obtain and that that makes them more desirable, so that if you want to buy, say, an expensive Italian sports car, Ferrari or something, you can't just go to the corner dealer and find it. You're probably going to have to travel someplace. They may not be open as long hours as the local Chevy dealer, and so on. They make you work for it.

Then you're going to have to order it. They're not going to have it sitting in the showroom floor for you to drive away, most likely. You'll have to place your order and go in queue for a few months to get your personal vehicle, even though, again, it

[The Brainfluence Podcast](#) with Roger Dooley

## Ep #2: The Psychology of Habit-Forming Technologies with Nir Eyal

seems counterintuitive, because selling products is all about removing barriers to purchase. In that case, the barriers enhance the perceived value of the product.

Nir: Absolutely. There's this really interesting cognitive cascade that shows that when we invest in a product, when we put effort towards something, we begin to shape our preferences and tastes in a really interesting way. Dan Ariely calls one of these phenomena the IKEA effect, that when we buy something from IKEA and we make our own furniture, somehow we irrationally value that thing a little bit more than we probably should, because we put work into it. That same phenomenon happens online. If we put money into something, if we put data into something, if we put these bits of work, we begin to literally change the way we perceive that behavior.

Roger: We've been talking a lot about consumer-facing products, but what about business-oriented products? There's certainly a big business-to-business market out there. Do these same kinds of techniques work in that environment?

Nir: Yes and no. Where it doesn't work is if the product is something that is not interacted with, if it doesn't need to form habits ... If you're selling into the enterprise, and your technology goes in some server room and nobody actually interfaces with it, then you don't need habits. If those type of technologies are typically sold to committees, and if the definition of a habit is a behavior done with little or no conscious thought, committees are the exact opposite. Committees way overthink things. You don't need to form habits if your sales model is to sell into an organization through a committee, and then you're done with it. Don't use habits. There's lots of other things to help you increase conversions.

## Ep #2: The Psychology of Habit-Forming Technologies with Nir Eyal

However, in the enterprise or in consumer, if the product is something that needs habits, that needs unprompted user engagement, then the same rules apply. In the enterprise, if it's a product like Salesforce, or GitHub, or Yammer, all these products require regular, unprompted engagement. Therefore, they need to follow the same basic model steps.

Roger: Yeah. I think in the book, you mention Buffer, which I've become a regular user of. I'd personally compare it to HootSuite, that offers some of the same features in terms of scheduling social media interactions. They're not directly comparable tools, but from my standpoint, they offer somewhat similar functionality. I've been a HootSuite member for years and basically tried to get started a few times, never could really get into it because of the learning curve. Not that it's so incredibly difficult, but just was a little bit more than I wanted to mess with at the time.

Buffer was just so dead simple to get using. They have such a great way of interacting with you to trigger your continued behavior. It's all very affirming, like, "Hey Roger, all your Buffer tweets are done. You ought to put some more up. Good job." It's a very fascinating approach they take. To me, the big thing is the simplicity and then also the fact that they do have these ongoing triggers to keep you engaged, far more so than most tools.

Nir: Yeah. That's a great example of a technique that I teach in my workshops, where I ask people to think of just one behavior they want to turn into a habit, one singular behavior, because what I often find is that people get excited about all the things that could be in the product and all the features they could add.

## Ep #2: The Psychology of Habit-Forming Technologies with Nir Eyal

I think HootSuite's probably a good example of that. There's so much you can do with it that, in a way, it's hard to form a habit with, because the brain can't associate what's the time and place where I use this product every single day, because there's so much you can do with it. Whereas, with Buffer, it's pretty simple. At least that first habit, that first initial behavior, is pretty simple. Every time I want to put something in my Twitter queue, that's where I go. That becomes the link. Then from where, once that habit is formed and you start investing in the product, now you can roll out more and more features.

What I always advise my clients and my readers to do is to pick that one singular behavior that you're going to turn into a habit, and that becomes the action in the action phase of the hook model. Then, after we have that one hook, now we can start adding more hooks.

Roger: Nir, what about physical products? We've been talking a lot about apps and websites, and so on. Products you have around the house that are certainly habit-forming, whether it's a particular brand of soft drink or toothpaste, are those candidates for a hook model?

Nir: It's not the focus of my study. I really look at habit-forming technologies, but you can certainly see some of those same traits when it comes to the products that we adopt habits into over time. The thing is, with physical products, is that oftentimes the investment comes up front, that when we buy toothpaste, the first thing we do is buy it. It starts with the investment. Then, of course, we're more likely to use the product once we've invested the money in it. Then we place that product in our home, in our bathrooms next to our toothbrush, and then we've got the trigger. The action is as simple as putting the toothpaste on the toothbrush.

[The Brainfluence Podcast](#) with Roger Dooley

## Ep #2: The Psychology of Habit-Forming Technologies with Nir Eyal

Then I think you often find that every few months, some company will roll out something new and improved, and a flavor, and a sensation in your mouth, that would justify or could be related to the variable reward. There's this pit of curiosity around what this feels like over time. You could look at a hook for some of these products, but to be fair, many times, when we use these products, we've already invested in them up front, and so we become much, much more likely to use them, because the investment came first.

The problem that I see, and the difficulty that a lot of online products have, is that they get lost in the noise very quickly, because if you're not on the home screen of someone's smartphone, it's very, very hard for the user to have an external trigger to come back. In a way, creating habits out of these technologies is way more important, because you just get forgot about.

If you buy that toothpaste once, well, you're going to see that toothpaste somewhere in your house, if you've put it in your environment where you would use it. With apps, you can have a great app that does wonderful things for your customer, but it just never gets seen. It's imperative that companies that are intent on forming healthy habits know these four steps of the hook model so that they can ensure that their customers use their products time and again.

Roger: Very good. We're just about out of time, Nir. I really highly recommend your book. It's *Hooked: How to Build Habit-Forming Products*, by Nir Eyal. I know that your book has changed the way I think about the work I do with online communities. Trying to figure out how to incorporate some of those elements in there. Some, obviously, have been part of software for years, but there's definitely a lot of room for

[The Brainfluence Podcast](#) with Roger Dooley

## Ep #2: The Psychology of Habit-Forming Technologies with Nir Eyal

improvement. Really looking forward to putting some of this in practice. Nir, why don't you tell our listeners where they can find you online and how they can connect with you?

Nir: Sure, and thank you again. I appreciate the compliments. It means a lot to me. My website is [nirandfar.com](http://nirandfar.com). It's spelled N-I-R-and-far-dot-com. The book is available on Amazon, *Hooked: How to Form Habit-Forming Products*.

Roger: Great. Thanks for being here today.

Nir: My pleasure. Thank 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](http://RogerDooley.com).