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MAF: [00:00:00] Welcome back to behavioral science for brands, a podcast where we bridge the gap between academics and practical marketing. Every other week, we sit down and go deep behind some of America's most successful brands and discover the behavioral science that powers them. I'm MichaelAaron Flicker .

RS: And I'm Richard Shotton.

MAF: And today we're sitting with Dr. Charles Spence, professor of experimental psychology and the head of the cross modal research laboratory at Oxford university. Let's get into it. So Charles, welcome to behavioral science for brands. Richard and I have made it our little mission to be on the hunt to teach marketers, the academic insights that can power work that can make their commercial application of marketing.

Stronger, better, more reliable, and most importantly, to make better work in the world. Uh, and, um, before we get [00:01:00] into today's conversation, if you'll indulge me, I'll just share a little bit about Dr. Charles Spence to give our listeners a little bit of background. So your research that I have come to really love, respect, and enjoy, uh, centers around multisensory perception.

Investigating how our brain processes information from different senses to create rich experiences. You have published over 500 articles, two very, no, more, more! 1,

CS: 1200,

MAF: 1200! 1, 200!

CS: Bloody hell!

MAF: 1, 200 articles, uh, multiple TED Talks, and received the prestigious Frederick Wilhelm Bessel Research Award, uh, and your applications for how you can take academic insights and apply them to commercial purposes.

A passion that Richard and I have are numerous. You've worked with many multinational [00:02:00] companies on multisensory design, packaging and

branding. In your LinkedIn profile, Dr. Spence, you may not even know this, there is a person that has said no one has done more to bring, uh, the work from the bench to the boardroom than Charles Spence, which I just thought was a very kind, kind thing to say.

Welcome to the show.

CS: Who was that? I'll send them a box of chocolates.

MAF: Exactly, exactly. Uh, welcome, welcome, welcome. So maybe you could tell us before we get into meaningful topics. How did you get involved? In learning and wanting to study multisensory perception, how did you get involved in wanting to apply it to commercial applications?

Where did this all start for you?

CS: Uh, mostly because no one else wanted me. I was going to go work in the city in an investment bank or management consultancy, one of those things. [00:03:00] Um, I sent off all my CVs and they all said, uh, bugger off. Uh, it was, it was 1991 or two, so last financial crisis. And I'd had one or two, it was, it was the very early days of, uh, word processing.

Uh, so there might've been one or two typos in my CV, but yes, they didn't want me. So I had to figure out something else to do. And, um, by chance had done my undergraduate project on, um, hearing and vision, breaking televisions and seeing how the brain dealt with, um, information when it came from different places.

Uh, so I'd break televisions, move the sounds around, cross them over and see, get people very confused. Uh, and that got me sort of interested in the senses, um, and it turned out that was nobody else looking at multisensory, how one sense affects another. There were people in my building who just did vision.

The next person along did just did hearing. They didn't speak to each other. Hadn't done three decades and didn't think there was any loss. No, the sensors were entirely separate. Uh, so it [00:04:00] seems to be like a big opening there for multi sensory stuff. Um, And over the years, I've just been kind of adding senses.

Started off with hearing and vision, and after a few years, I added some touch, and then some pain, and then smell and taste. And then you're in the world of food and drink before you, uh, know it. Um, so that was the multisensory side.

And the applied side, uh, when I started teaching back in, uh, Oxford from the first day, um, there's a conference, and, uh, Unilever were in the audience, and they said, we're funding some students to do some similar stuff.

Uh, we'll fund you. Just do whatever you want for a few years. And then over time they had some commercial problems that got me into smell and taste when their fruit teas weren't performing. Um, and at the time, not really thinking that, uh, this was necessarily academically or intellectually interesting, but then.

Always time and again being surprised that in fact that, uh, you know, smells more interesting than you realize. It's one of the oldest senses, evolutionarily speaking. It's the only sense it doesn't cross over in your head, uh, and off you [00:05:00] go. Um, there are all kinds of really interesting questions you can ask, uh, sort of spurred on by that, uh, commercial, uh, uh, thing.

And I think for me it was, um, the, uh, my, I'm not sure it's just my parents, but probably others as well. You know, you know, we don't need a bloody psychologist to tell us that kind of thing, you know, uh, what they pay you to give a 16 lectures a year. Can you call that a job? It's a kind of a, uh, a stick I get.

And so from that, trying to do something in the real world that has value, uh, or application, uh, impact, as they call it nowadays has always been a driver. Rather than just sort of, uh, uh, dreaming up some models and box and arrow diagrams as us cognitive psychologists used to like to do.

MAF: And in this journey, I, I'm going to credit you, or you can correct me here, with coming up with some pretty amazing names for what you do.

Gastroneurology, you know, in my own [00:06:00] words, gastro porn. I heard you say, uh, which, which is the how to make the food look more desirable on the plate, but really using the, the academic insights and then helping a restaurant serve better food, helping a hospital make healthier, have have patients have healthier food options.

There's some real. Benefit to the work that you, that you have been advancing tangible, easy to understand benefits, wouldn't you say?

CS: Absolutely. Um, I guess our aim is to have fun really at the end of the day. Um, and I've been lucky to have nearly only and Not always, but very often supported by industry.

Um, have no, virtually no academic traditional funding. Um, and over the years that's sort of, you know, taken us from car companies, to paint companies, to fragrance, to food and drink packaging, [00:07:00] uh, clothing, you name it. And, um, Yeah, that's, that's sort of a, I think a really interesting, um, set of problems that, that crop up, um, and of which you need names for, uh, it probably was the, uh, Sonic Chip, which got us the Ig Nobel Prize, the prize you didn't mention, in your introduction, the Ig Nobel Prize for, for nutrition in 2008.

Uh, and that really took us on a, on a journey into food, into gastrophysics. I think it was a term I prefer rather than gastro neurology and, uh, uh, food porn, and then of course there's yolk porn you didn't mention, uh, and, uh, Sonic seasoning and, uh, uh, very often. Uh, for whatever reason, find oneself sort of talking to the public, uh, and at festivals and events and such like, uh, and then your sort of research, I suppose, ends up when you're thinking about what to do next, you're sort of thinking, well, what could I have fun talking about, which is a very different question from what would go well in a scientific journal, but no one will [00:08:00] ever read, um, and say these kind of more fun topics.

Maybe with catchy titles. I didn't deliberately do those. They just sort of popped out. Um, it has proved a fruitful direction. And then when something sticks, I guess, as they call it, in the people's minds, and that kind of leads to further research. And I spent more time studying crisp packets than probably anybody else on the planet.

It wasn't my intention to do so. The sound, the color, the texture. Um, but it was all from that first sonic chip experiment in 2004, done when we were being funded by Unilever. Um, that, uh, kind of started me on that path, and ever since I've been saying, okay, what can I do next? Because if people have heard about the sonic chip, and again, as my parents would have used to say, oh, or speaking to a journalist, oh, it's not the bloody sonic chip again, is it?

Don't you have anything else to talk about? It's either that, it's either that or smelly candles. What was the sonic chip, uh, Charles? Uh, so this was, um, Back in about 2003, 2004, uh, we [00:09:00] were doing projects with Unilever on the one side on their fruit teas. Why did they look great? Smell great, but people said they were disappointing to taste.

Uh, so like multi sensory flavor research. Um, and on the other side we were doing stuff on fabric conditioners and washing powders. And how to make clothing appear whiter and softer when it came out of the wash or the dryer. Um, and so that was all about sort of sound and touch. And then one day we had

to present both of these projects, the fruit teas and the soft clothing, uh, with fabric conditioners, uh, at head office.

And, um, we could put those two things together. We cannot the sound of clothing and we were making things like clothing feel softer by changing the sound it made Um, I thought we could do that with food and this became the sonic ship experiment where we had 20 hungry undergraduates Stuck them in our gold soundproof booth in our department when we had one before it was closed down with asbestos and destroyed Um, and yeah, there's 20 hungry undergraduates two tubes of pringles each [00:10:00] Which are kind of ideal for behavioral science research, as you'll realize, because each one is the same size and shape.

So your stimuli are consistent. Uh, it wasn't Unilever brand, uh, at the time, but they're kind of consistent stimuli. And we'd, uh, open our gold sandproof door, give our hungry participant a potato, well, you can't really call it that, you know, a Pringle. A potato thing, um, and get them to bite into it and rate its crispness, its freshness, and how much they liked it.

Um, and, uh, we found that by simply by changing the sound of the crunch, as people bit into these things, uh, we could enhance crispness and freshness by about 15 to 20 percent. Um, and that became then, yeah, but we didn't think anything of it. We published it in a very boring journal of sensory studies. Um, But then the ignoble committee picked this up and thought this was, you know, bizarre and crazy.

Why would anybody, you know, change the sound of a crisp? Um, and then it just took on a life of its own as, uh, the global press erupted. And philosophers. And, uh, and, uh, what the use, I suppose, is, you know, on the one hand, I think that for me, it's very nice. It's kind of an example [00:11:00] where you take an approach, um, about sensory interaction from the science lab.

And there's a long history of, um, sound and touch research. Take that paradigm and apply it to a food product, which has never been done before. And every food company, a lot of them in the States, General Mills, and uh, such like, have lots of papers from the 1980s and 90s where they'd record the sound of somebody eating something, um, and then play it back to some other people and say, What were they eating?

How delicious did that sound? Or not. Um, We got somewhere but not very far, and we were the first to take this technique from the science lab, um, and apply it to the food, and by so doing, we could like virtually prototype new food

products, um, by changing the sound, seeing what people actually like to eat, and then going to the kitchens to see whether we could actually make or bake or create that thing, rather than the traditional way, which was, um, uh, with the food companies going to their kitchens and they get them to make and bake new stuff, um, and then find out that none of their consumers like the new product, and it's back to the kitchen for another round of, you know, [00:12:00]

RS: That, that idea of being able to improve the, well, the crunch or the taste or enjoyment of a product through other senses seems to have phenomenal positive opportunity in the, normally the way you make things taste nicer, I guess, is you stick fat or salt or sugar, all these things that aren't great for you.

So it's an alternative way of making something more preferable without adding any nasties in. So it feels like as. Society, there's a great opportunity, uh, in this area.

CS: And it's sort of an interesting one in that if you go back, you know, uh, we've sort of gone from the sound of the, of the crisp itself as you bite into it, into the sound of its packaging.

And then you ask the question, well, why are crisp packets noisy? Uh, yeah, I just think it had to be that way. Just something about preserving them from stopping them from getting stale. So that's nothing to do with that. It was just some intuitive marketer back in 1930s in the States. They used to sell crisps in buckets, I think, and you go into the, into the corner store and you get a scoop of crisps from the, from [00:13:00] the bucket.

And then some of the early marketers figured out a noisy food deserves a noisy package. And ever since it's been that way. Um, and so you get this sort of intuitive marketing insights that then maybe we pick up and play back later. Uh, and that, um, ultimately, again, there's this sort of mystery here.

There's so many of our snack foods, uh, that we love, are crispy, crunchy, crackly, snap, crackle, pop, you name it, they're kind of noisy, um, but there's no energy value in noise, um, so why do we like noisy foods? Like a whole mystery there, and sound isn't part of what we define as flavour and yet it is a key driver of our likes and snacks, and hence then if you're thinking about, you know, I want to start selling, um, getting people to eat, increase, to have, uh, consume more insects, entomophagy, then, uh, how am I going to do that?

Well, if I'm going to fry some crickets, they're going to be crispy, crunchy, they're a noisy food. I'm going to play with that sound, I'm going to make sure

that they come in a very noisy packet, just like all the potato chips, and maybe you've got a head start there on sort of nudging people towards [00:14:00] Uh, alternate foods.

MAF: Fascinating. And, and you, and, and you have taken this idea of sonic seasoning and then you have, you, you, you, after this award, I've been looking at other senses and how it plays. I was reading about, um, about when you used, uh, the color of plates to change the sweetness of Perception of ice cream. Can you talk a little bit about about how that came about and how you got there?

CS: so with um Yeah, I mean I I was never i've always been interested the senses on this application But that was always initially in technology with mobile phones and driving and such like warning signals for car drivers Um would never really Got interested in food if it hadn't been for, uh, the sonic chip.

Um, they're sort of dragged into it, but then that, once we were doing the sonic chip experiments around that time, [00:15:00] Um, the soon to be world's top chef, Heston Blumenthal, Uh, who wrote the foreword for, for gastrophysics and sense hacking, Um, came to the lab. Um, we put him in our soundproof booth, gave him the sonic chip.

Um, and he sort of came out saying, well, you know, sound is a forgotten flavor sense. Sound's an ingredient the chef can use. No one ever told me about that before. Um, um, after some iterations, um, that sort of led to the sound of the sea seafood dish. So on the one hand, you have the food companies taking this, um, insight of a psychological, call it behavioral science paradigm from the lab, applying it to a real world product food.

They use it in house for product innovation. But no one ever hears about it, really. Um, and then the chef takes that insight and turns it into something memorable and enjoyable that makes people cry sometimes. The sound of the sea, seafood dish. The dish that comes to the table looking like the seashore with sand and foam and sashimi.

Um, but also comes with a conch shell with some earbuds. Um, the waiter will recommend in his best French accent, you know, put those earbuds in. And [00:16:00] when you do that, you'll hear the sounds of the sea and the waves crashing on the beach. Um, and it's a transformative,

RS: bizarrely

CS: a transformative experience, um, for diners.

And this we did first with Heston in Oxford in 2007. We had a big event for 150 people, um, like an arts and science conference, Art and the Senses it was called. Uh, and Heston was coming. We'd sold tickets for 15 a head. People were expecting to see the great man and have something to eat. And about a day before we hadn't figured anything out, uh, at the last minute we thought, oh, what could we do?

Okay, well you bring the oysters. We'll play the sounds of the sea or farmyard chicken noises. Um, it really made a difference to people's enjoyment of the oysters. And that then led into the dish. Uh, and from that moment on, the chef was quite famous, but not as famous as he has become since. Um, but then that got me into the world of, um, uh, working with chefs.

Um, And so from Heston Blumenthal, and this went on as the signature dish on the menu in the Fat Duck restaurant. Um, this then led to lots of, uh, [00:17:00] events with, you know, the sort of world, um, gastronomy forums and chefs awards and things. Suddenly realized you've got to eat much better food if you worked on gastronomy than you did if you worked on your regular psychology.

So that was it. I was never going back. Um, but at the same time, you could see how they, how the chefs, uh, the best of them, the most open minded. Could take that scientific idea to something that tickled their interest and then turn it into something amazing and memorable and that was something that's often the industry chefs and kitchens fail to do they could take the science and create something you just sort of dribble down your down your face and you.

Well, no one's going to enjoy that. I can see the science in it, but whereas the chefs could take these insights and turn them into delicious stuff and memorable and talked about, and that was great. Um, and they can do it really rapidly. And for me, having always been funded by the sort of, uh, industry, you know, and coming from 10, 15 years working with car companies, uh, I've got some ideas, they've got some ideas, but even if your idea works [00:18:00] perfectly, you come up with a dream solution to some technical or problem for a driver.

And of course the experiments never work perfectly, but even if they did, it would take 15, 20 years before that insight makes it into a high street car you could buy. Very, very slow innovation. And then, you know, there's downsizing, a resizing, a moving of the factory, the heads changed, you know, priorities changed, and so it's so difficult to get anything done.

Whereas a chef. If they're in charge of their place, if they like the idea, within a week or a month, they have something on the menu with real diners paying real

money. And the innovation just happens so much faster. Uh, and this was an eye opener for me to see how the chefs could do this so quickly. And from that, then I've been working with chefs famous and not famous around the world ever since.

Um, and this is where the, uh, white and black plate study came from. Working with Ferran Adria, another world top chef, and his Alicia Foundation in Spain. Um, and, uh, yeah, we had about 65 people, um, in, um, in the Alicia Foundation, in their, sort of, dining facilities, [00:19:00] uh, and everyone got to eat the same strawberry mousse.

So, pink looking thing, um, either on a black plate first, or on a white plate, and then crossing it over, like a good, well controlled experiment, and asking people to rate the sweetness, the flavorfulness. Uh, how much they liked, uh, the, the, uh, strawberry mousse they were tasting, and then do it again on the other colored plate.

Um, and yeah, the amazing result was that even though the people were the same, and it's the same place, the same day, eating the same batch of strawberry mousse, serving it on a white plate made it taste significantly sweeter, uh, more flavorful, and about 13 percent more liked than exactly the same food served on a black plate.

Uh, so while you can't literally taste the plate, uh, the plate on which food's Tasted does change the taste of the experience, and that was, we published that in 2012, um, not really sort of quite believing it, but now 12 years later, 2024, there are now 40, 50 published studies from around the world with different foods and different cultures showing not always the same result, but always or nearly always [00:20:00] that the color of the plate or the glass or the cup or the food package can change people's appreciation and consumption of Uh, the contents or what's on the plate or in the glass and everyone sort of studies, you know, it's bizarre for me, everyone studies like the food itself, the drink, the chemical composition, the shelf life, uh, but every drink you've ever had always came in a glass like the one you just slipped from there, uh, or a mug or a can or a bottle.

Um. Everyone studies the drink, no one studies the receptacle. Everyone studies the food, and until 2011 when we came along, no one had studied cutlery. But everything you eat, in a polite society, gets to your gob via a knife, fork, or a spoon. But it's slack ignored. And once you can show that all of these factors make a difference, do it in the first place with these sort of innovative chefs, in a sort of very, we can do sort of very rapid experimentation, and then think about

how those insights can go from the plate in a restaurant to the package for a food company.

Because for me, you know, if we eat a third of our food and beverages direct from the packaging, [00:21:00] then the package is the plate. And whatever's true of plateware, it's shape, it's colour, it's texture, it's impact on food or drink is probably going to pan out to be also affecting your rating of a can of cola, uh, or your ready meal.

RS: Presumably, if people have been cooking for thousands of years and there's thousands of people doing it, to, to push that on and come up with something, Uh, much, much better is phenomenally hard because there's been so much competition. But if people haven't been looking at the weight of the cutlery, the color of the plates, the shape of the goblet, then they should theoretically be huge leaps you could have with not much, um, not much tweaked because it's, it's an underexploited area.

Wouldn't that be fair?

CS: Yep. Um, I mean, I guess there's sort of multiple things going on. One is that, you know, uh, there have been, uh, intuitive chefs and designers out there and marketeers who have picked up on some of this stuff over the decades. And the, uh, one of my favorites with Louis Cheskin from the 60s, the Madison Avenue marketing magician.

Marjorie and, yeah. [00:22:00] Yeah. Yeah. Uh, and circled the shapes and tastes. So we're rediscovering shape taste correspondences half a century later. It doesn't really explain what he did or how he came to his, his conclusions. Um, but. Yeah, we're sort of, you know, rediscovering some of his insights, I think, and expanding them with a, with sort of a more neuroscience understanding what's going on, what's driving these connections.

Um, and yeah, where were we again? I forgot,

Auto: no, off topic.

RS: I was just saying the potential opportunity, because it's not been a heavily researched area. Some of the easy ones are probably there

CS: to be discovered. A lot to be, potentially to be discovered. Um, accepting these, you know, clever, intuitive, Characters of the past, maybe chefs, but also marketeers who picked up some of this stuff and incorporated it.

But on the flip side, there's also, I guess, kind of the inertia, uh, that people have, so I know this keyboard in front of me right now is optimally designed for a good old fashioned typewriter. So there's keys wouldn't stick. It's not ergonomically [00:23:00] designed for typing and yet we're never going to change it.

Uh, so that inertia might also hold true in the world of cuisine and gastronomy. I could perhaps find a new utensil that's better. We won't call it a spork, but something else that's not a fork or a knife. Um, but would people be, how would you nudge them to change when they're so comfortable doing what they, uh, what they do already?

Um, that's not, uh, an insignificant challenge. Not insurmountable either, uh, I mean, I'm sure we can get over it, but, uh, it is a, there's a resistance.

RS: You've mentioned lovely examples from, um, Adria and Blumenthal around applying some of these principles. Have you seen examples of, um, brands, uh, applying some of the ideas into products and creations on a larger, larger scale?

CS: Yes. Um, so I [00:24:00] mean, one of the nice things is sort of working with the chefs. Well, they don't have any money. If they do have any money, they don't have any money for research. So it's just for fun. Whereas the food companies, they have the money for research, but then maybe you can't talk about it so easily.

So there are various examples out there. One of my favorites comes from, uh, we were working to show that tastes have shapes, uh, working with, um, what's he called? Um, uh, Dominic Pessounet, who's like a Michelin starred chocolatier to, to the Rolling Stones and has, um, a rock and roll, uh, chocolatier in Belgium.

He's got chocolate line shops and we're doing experiments in his chocolate shops, playing music and changing the shape of the chocolates and stuff. Um, and one of those studies was around the shape of the chocolate. Um, and so we sort of found that. People associate sweet tastes with round shapes and angular shapes with bitter tastes.

Um, and we tested that in his rest, in his, in his chocolate shop with real [00:25:00] customers. Make the chocolate rounder. People will, under certain conditions, say it tastes sweeter. Uh, so then we came out in 2013 and I think 14 it was, I said a paper. Now, if you want to make your chocolate sweeter as a

company, you should reduce, you could, you could reduce the sugar content while keeping the sweetness the same, simply by rounding off the edges of your chocolate pieces.

Um, next year, whether or not they read my article, I dunno, uh, Cadbury's Dairy Milk comes out with a new rounded. Um, and then the Daily Mail readers are up in arms because it's a North American company that Mondelez has now taken over a British Cadbury's and they're messing with it with this formula and they say, you know, what have you done?

You're messing with our chocolate. Put it back the way it was. What don't you like? Uh, it's too creamy and sweet. And then you have the Mondelez people say, no, we haven't touched the formula at all of the chocolate. All we've done is change the shape. And if chocolate, if sugar wasn't so cheap, then they could have reduced the sugar and change the shape to keep the percept the same.

Um, and you can see [00:26:00] many others now, chocolate companies who are starting to round off their products. They probably don't want to have a discussion with the consumer about sugar content and things. Behind the scenes, you're thinking, well, I sort of know what's going on here. Uh, this all makes sense. Um, through to, uh, one might think of, we've done a lot of work on, on, on, on sound and its impact on taste.

Um, And so, for example, explaining why it is that people, um, uh, drink tomato juice in airplanes but never on the ground. According to the population, they drink tomato juice in the air, but they never do it on the ground. Very bizarre, or bloody Mary. And my suggestion was, it's about the sound, that, that the aircraft noise, about 80 to 85 decibels, uh, suppresses your ability to taste sweet and, uh, salty.

But maybe it enhances your ability to taste umami, the mysterious fifth taste of, protonaceous taste of, uh, Parmesan cheese and tomatoes and Worcester sauce. And hence the bloody Mary. Um, the following year, uh, researchers in, in, in the States. Uh, prove this was correct that when you play airplane noise to people [00:27:00] on the ground, your perception of sweetness goes down, so you could add a lot more of that, very unhealthy, but your perception of umami goes up, it's enhanced with airplane noise, bizarrely, and then with that insight, uh, then you can see how, uh, various of the airlines have then been upping their umami on their menus, knowing that that is a taste that will work with passengers, Um, and again, some, some airlines like British Airways, uh, announced that umami forward menu, lots of head scratching in, in the UK in 2013 or so.

Other airlines sort of do it, but without necessarily wanting to bring up that word, you know, umami or monosodium glutamate for fear of what passengers might, uh, think.

RS: The, the experiment with, um, the, the rounds shape boosting sweetness is a fascinating one. Do you have a hypothesis about why roundness is associated with sweetness?

CS: Oh, I've got lots of speculations. Um, none of them proven. Um, uh, so, uh, one way it might go [00:28:00] is, well, we've done experiments where we give people. Equally intense, this is going to be a lab experiment. Equally intense solutions of bitter, sweet, salty, sour, and amare, just the basic tastes. And say, just, you know, just kind of draw your experience over time.

And what you find is that with sweetness, people will describe their experiences coming on gradually, sort of lingering and then fading gently. So kind of a very rounded temporal profile, if you will. Give somebody an equally intense sour solution of citric acid. And it's like up and down. Very pointy.

It's right on and it's gone. Something sharper and no surprise then that citric acid or acidity, sourness is matched to angularity, spikiness, sweetness is too, uh, round. So it could be something there. It could also be that, um, maybe we just put with things that we like go together and things that we don't like or are dangerous.

Go together. So sweet is a university like taste from from birth onwards. We need the growth round shapes are kind of nice and cuddly, [00:29:00] whereas bitter taste or potentially poisonous. And hence we pick those match those with very low pitch sounds from big objects. It could be dangerous and with angular shapes that could hurt us.

Um, there's another just so, uh, uh, uh, story there. Or, um, my other one is to think about specifically in chocolate. Well, chocolate and, um, leafy greens. So in, um, chocolate case, I'm kind of pretty sure that milk chocolate fractures differently than dark chocolate. And the higher the cacao content, the more angular pieces.

So there is kind of a statistical relationship in nature. We don't concentrate on, but our brain picks up all of these things automatically, um, and then we can sort of play them back, um, and the same thing might be true for, uh, you know, I'm thinking back of a rocket. If you get a proper rucola, whatever you call it in the States, um, a real proper fiery rucola that's got very sort of pointy leaves.

Where is your cost? Lettuce your iceberg. It's just around and round and has no taste at all. So is there also a correlation there between things [00:30:00] that are, I mean, for lots of plants kind of having a spike puts off the predator, but then also having a bitter taste is also puts off a predator or a spicy taste.

And so, in terms of sort of, uh, animal plant communication. Then, you know, bitter tastes, angularity all go together, sweetness, red colors go together to attract you or

RS: repel. So over time, people have seen these things happening together again and again. Yep. Therefore, that when one of them happens, they assume the other will as well.

It's almost like Pavlovian, they've

CS: been fudged together. Yeah. I'm probably not in a way that one can articulate why. Um, being sort of playfully generate these postdoc explanations that may or may not have some grain of truth. My favorite one here. I mean, of course, if it's the case for, um, I think that we learn that fruits go from green and sour and not having much energy to riper and warmer colored and redder and sweeter and more energy dense.[00:31:00]

And so learning that's a statistic of the environment between color and taste or energy learning that's very useful for us. Because we know it's trees to climb to get the energy, uh, a rich, uh, food. Um, but the other ones that are useless is we find again and again that, uh, very low pitched sounds go with bitterness and very tinkling high pitched sounds will bring out and go with sweetness.

Where on earth could that come from? Well, if you look at any newborn baby Be it a newborn, uh, human, uh, rat, or a chimpanzee at birth. All those species are all made making the same stereotypical orofacial gestures. We all stick our tongues out, rat, human, and chimp, to get the calories for growth. What we need from sweetness, indicates.

And all species will stick their tongues out and down to eject bitterness. Because that's a sign that something may well be poisonous. So we're all born doing that. And then if you think about the kinds of gurgles and growls, um, and cries you make with your tongue out and down versus out and up, kind of a sonic difference.[00:32:00]

And that's, you know, true the world over across species. Um, and maybe our brain picks that up, we pick it up in our, in our studies in the lab and online, and

then we play it back with composers to say, okay, we can make your chocolate, whatever it is, taste sweeter by playing those sounds.

RS: Yeah, I mean, the other area I found absolutely fascinating are those, um, associations starting to become self fulfilling prophecies. You mentioned in sense hacking around, um, bloody B and O is it Bang and Olufsen? I'm not into high fives. Yeah. So they, they would use, um, much, much heavier remote controls than they need to be because there's an association between heaviness and high quality.

Yep. Is that something you see in areas beyond, uh, high fives? Do you see that with, with food and cutlery?

CS: Yep. All over the place. Um. So, we've done experiments with cutlery in Scottish [00:33:00] high end restaurants. Uh, where half the tables have cutlery that is light, canteen, cheap and nasty stuff. The other half of the tables, eating the same food the same day in the same place, will have a very heavy, uh, cutlery.

And they'll rate the food as significantly more, willing to pay significantly more for exactly the same food, simply they're holding something heavy in their hands. Uh, we've seen it when we've done studies with, um, uh, adding a weight to the bottom of a can of cola. So please take this cola, open the can, take a slurp, tell us what you think.

And that little 30 gram weight underneath the can makes it taste better. Same thing with boxes of chocolates. Um, same thing with yoghurt pots. Uh, same thing with bottles of wine. Um, and there we've, I mean there's some, obviously there's some intuitive understanding of this in some sectors. So when you go to the wine, uh, conferences, uh, that some of the new world wine producers.

If they've got a reserve bottling or a special thing, they will deliberately put it in a heavier bottle. Um, and then when we go and study [00:34:00] in the marketplace, um, in the Oxford wine company store, we had two very boring days in 2012. It was when Bettina Picaris Fisserman and myself weighed every single bottle in the wine shop.

Um, from bottom left to top right, looking at the great variety of the price, the region of origin, uh, color of the wine and so on and so forth. Uh, and what came out from that is that for every extra pound sterling consumers paid, um, you got an extra eight grams of glass. You might get a better wine as well, but what you definitely get, uh, and then that sort of makes sense of, um, the

behavior you sometimes observe, uh, when people get, get into wine stores or in the wine aisle in the supermarket, they wander around a bit, uh, and then sometimes they'll pick a couple of bottles off the shelf and they sometimes kind of just do this little jiggle thing with their hands, one bottle in each hand, that will not tell you about the quality of the wine, but what it will tell you about is subtle differences in weight that then you've internalized, uh, and, and hence will lead to a better expectation.

For a wine. Um, and then you find [00:35:00] now some going up to, we've got exemplars of, um, uh, bottles that are 2.5 kilograms of glass empty. Whereas if you buy a bottle of wine from Aldi or Lidl, you're looking at less than a kilogram full of wine. So there's a huge variation there through the depth of the punt, thickness of the glass, uh, and so on.

And that becomes a sign that, and so we see it again and again, um, wherever we look, but there must be exceptions, of course. Um, I think if something I have come, I've come across some mentions of restaurants in London, hotels in London, uh, where the cutlery is so heavy that some people find it difficult to lift it up.

So it's not that always heavy is better. I think so. If it's heavier than you expect, that's a really good thing. Um, regardless of what the absolute weight is, um, and, uh, the exceptions, other exceptions might be, I'm very interested in sort of teacups and wine glasses, uh, where it [00:36:00] feels that different rules might apply, um, and also maybe in, you know, uh, laptop computers, um, and things like, you know, I don't have a mobile phone, but those who have mobile phones, maybe they're too heavy or isn't necessarily better.

Well, I do still have my, um, my, uh, iPod here, you know, hasn't worked for years now. But something about this, you know, I'm reminded of was it, uh, Aaron and 1928, a kind of consumer engineering was called just after the Great Depression. Um,

RS: uh,

CS: and they say, you know, whatever you're designing, make it snuggle in the hand, be it car keys, be it the inside of the fur coat for the lady to make sure it's got silk lining.

So she puts her hands in the pocket. So it's just all touches you by giving car keys. They should feel heavy in the hand, snuggle in the palm. And I think this sort of iPod here, it's got a reassuring weight, it's not too heavy, and maybe the

study I really want to do, but I'll probably never get around to, is I bet that, you know, being my caveman self, if I was [00:37:00] trying to knock out a bison on the prairie, this would probably get further away, I could throw this further than pretty much any other weight, that's my hypothesis, and that's why I like it so much.

Oh,

RS: what kind of rough weight is that? This is the,

CS: ah, hmm, 400 grams? 450 grams, I'd guess.

RS: This is optimal bison killing. Yeah, that's my speculation. Wouldn't have been nice if it was true. For

MAF: the Americans in the room, 450 grams would be about 16 ounces, just for the Americans that are listening at home. Uh, you know, uh, Charles, we've, we've covered a lot of, uh, a lot of really interesting topics, but the listeners as that come to the podcast are marketers, their brand leaders, their agency leaders, and they're constantly asking themselves, how can I take?

Not even new [00:38:00] ideas, but proven things and apply them to my brands. So you've gotten to cover a large breadth of topics. Are there are a few ones that you say, these are just marketers should really consider these, or these are things that we have high confidence in that we don't see. The market using enough of like, is there, is it, what comes to mind when I, when, when, when we'd say which, which we put into practice?

CS: Oh, you're asking me a very expensive question. Now,

MAF: only what you feel comfortable before we ask you to become a consult with your lab.

CS: So, um, well, maybe I can step back a bit before jumping in and that would be, um, used to do a lot of work with, um, VF corporation in the States. On sort of store, multi sensory store design, um, and they're in most of the clothing stores that brands, I guess, one's familiar with, um, and there I would go and give talks about how to improve store design through the senses and use [00:39:00] scent and temperature and sound, um, and here's the evidence showing the increase in dollar sales in North American supermarkets and, uh, shopping malls.

If you have the music and the scent congruent, then 50 percent increase in sales. And they'd also have nod their heads, all the brand managers. And then do nothing. They just, they just, they just get a new lighting system as they always did. Um, and that happened again in the next year. And so it sort of got me into a state where I used to think that if I got a result and it was significant, and a nice graph and a paper, then the world would change.

Um, but then I sort of think, no, in fact, if what you try and tell people they should be doing doesn't fit with their intuition, They'll just ignore it. Um, they won't take the chance. And so this area of sort of gut feel becomes key and have a separate line about how often gut feel is used by the [00:40:00] marketers or marketing managers to decide.

They might like the idea of the science, since the science fits their gut feel, but then they use it. Um, but if it doesn't, or it sounds risky, then, um, And so I think all of us think that we can just, I think, you know, all of us think we can just taste the food on the plate and the drink in the glass, that we wouldn't be fooled by somebody changing the music.

We wouldn't spend more if they, if they played the music faster or louder, we all think we're sort of in control and can perceive directly. All the research says that's not the case. That's what our intuition tells us. So then if I go to a, you know, the store manager and say, okay, if you put this music on, people would spend more, uh, drink more and that your wine would taste significantly classier.

It doesn't fit their intuition. They just won't do it, won't take the chance. And so the real challenge for me then is to say of all the many things, uh, that the brand managers could, uh, utilize more, how do you actually. create experiences or how you [00:41:00] behavior change amongst this set of individuals. And that's partly why we've been doing, um, a lot of sort of experiential events where you kind of experience the science rather than just reading about it or seeing a PowerPoint graph.

Um, and for me there, uh, we've been doing a lot of things in London, but around the world on, on, um, kind of sensorium sensiblerations, uh, where you bring in consumers. And also brand people get them to rate, say, a glass of whiskey, a glass of wine, and then change the lighting, change the music, give them a piece of sandpaper, get them to rate it again.

And then they can see from their own scorecard that what they say about the product is significantly different and that everyone else has said something

different. And that, when they've had the experience themselves, that's what's led to people going away to the bars and restaurants and actually saying, Okay, if one of my customers orders a whiskey, I want to make sure that it has, you know, the log fire sounds and the wood texture.

Um, far more than any actual [00:42:00] result in a paper would ever, uh, achieve.

RS: I went to the fat duck where they have the sensorium and even having read lots of studies before I went in, I was still slightly skeptical. And then they undertake an experiment. So my wife and I had a glass of wine, then they changed the lighting, changed the sound.

We picked up exactly the same glass with the same liquid in and drank it. And oh my God, it was completely different. And I was even having known about the numbers, being fascinated by this as a topic, I didn't quite believe it fully until I'd seen it on my, on myself.

CS: Um, and then that becomes a powerful thing that that is the thing that will get people to change or incorporate these, these unintuitive, um, insights into their things.

Uh, for me, I think, for These days working mostly with sort of the food and beverage sector. Then, uh, on the one hand we're very interested about how you can take these sensoriums, [00:43:00] sensplorations, these, uh, experiential events, um, but then sort of scale them. And these sort of things I think happen first, the first sonic seasoning where we deliberately change the taste of a food by changing the music you listen to.

We did that first in 2012 at the House of Wolfe in Islington, North London. Uh, with the chef there and the fat duck was, was, was helping with the, with the, um, proceedings too. Um, and you know, that time talking to a band saying, by brand saying, okay, if you get your consumers to change the music, listen to your food product will taste different.

No, just go away. Leave us alone. Don't be so stupid. Then when, when the world's top chefs actually does this incorporates in their restaurant, then suddenly. It's a different conversation. Well, we want to have a bit of that. Um, and then it's a matter now of, um, so many brands are all jumping into this idea of sonic seasoning through, uh, sensory apps where you take any food and beverage brand and say, okay, let's scan the QR code, scan the label, uh, and get access to some sort of content.

So we've just done projects with, I don't know, Keurig coffee in the [00:44:00] States with a music to match the latest coffee varietals for their machines. Barilla pasta is just out currently in the States matching. Different sound Spotify playlists to, uh, different, uh, pasta cuts. And that seems to be a really rich area to, to, to, to, to, to, to connect with more touch points than I know a bar of chocolate normally can to linking it to music and color and doing it through the ubiquitous technology that's around us.

I don't think, uh, most consumers are really ready to buy technology to modify their food and beverage experience. But the great technology that's sitting around the tablet that you can serve your dinner off or the mobile phone. It's really got more firepower than whatever the computers that took us to the moon.

Uh, how can we reposition that?

RS: Yes.

CS: Um, and link it to a brand based on probably what you've seen, read about, maybe even experienced at one of these high end restaurants that's hopefully been built, inspired by, uh, the sort of multi sensory science.

MAF: Yeah, yeah. [00:45:00] I just love to double click on 1 of the things that you that you raised, which is we hear often that when brands want to get an edge, they look far and wide for these opportunities.

But something you said twice in our conversation today is. The chef just moved faster within 30 days. They are putting something in market and trying it and iterating it where, you know, obviously a car can take 15 years to come to market. Those are two great extremes, but for marketers and agencies to be willing to test and experiment more, to be willing to put more into market faster is something Richard and I talked about.

And I think this is just another example of how they can get an edge by just trying to iterate faster.

RS: Yeah, because if you're the Chipotle, uh, decision maker or the Starbucks or the Caffeinero, you've got an amazing opportunity. You know, you've got a thousand restaurants, randomize a few into, into different cells and test the weight of [00:46:00] the cutlery, test the BPM of the music.

And if it works, you've got massive upside. You run it forever. If it doesn't work, well Turn it off after two weeks, the odds are so stacked in your favor to

take this kind of research and apply them to your business, um, brands should be

CS: doing it far more more. And I think that's the way like, um, we're talking to the clothing companies are saying, okay, you can take from the research has been published somewhere in the world, some decades, not too long ago, that the music really matters, that probably the tempo and the loudness and the type of the music.

But what's going to work for your customers in this day and age in your country, in your market for your product, I can't tell you, you need to do the experiment. You take from the previous research that it matters now optimize it for your, um, and for that, then it should be this continuous sort of experimentation, um, and done, but sort of done in such a way that I guess consumers don't want to feel like they're being experimented on.

Unless it's an experiential experimental event, um, so it's sort of, maybe it's going to be these sort of [00:47:00] gradual variations that sort of explore a space subtly without going from, you know, classical to heavy metal or something. Otherwise people are going, you know, I don't know where I am, what's going on here, but that that sort of, you know, will then give the data that I think, you know, would, um.

Uh, what would, uh, be, uh, yeah, uh, hugely valuable, um, and, uh, hopefully then convince the, uh, the powers that be that this is, uh, um, something that's worth, I mean, maybe the other challenge I suppose is, uh, I can see many brands who want to have the next new thing, uh, let's have the next new thing in Sonic Seasoning, let's have the next new thing in experiential food, or then the campaign launched, they get press headlines.

And then it's bang, off, finished, on to the next thing. And I want to say, you know, if you really believe this made a difference, such that, you know, we did a thing with British Airways a decade ago on, um, uh, given that [00:48:00] engine noise makes food taste bad in the air, putting on noise cancelling headphones is the simplest way to make your food taste better in the air.

Um, and then if you play in some sonic seasoning, it tracks in the headset, in the airplane to match the dishes, you can actually season your food. And this was, it went for a while on the long haul British airways in 2013. There's some seasoning menu, um, great headlines. People loved it. Uh, and then it's gone.

Uh, I managed to decided that what the next big thing, and so it was sort of frustrating me to me now is, is how often these, these, these activations, these, um, uh, things are done just for the short term and how, how can we make these things stick permanently? Not just as a gimmick. So I believe that they have the power to, um, uh, have that longer, uh, uh, longer term impact, which can be just for, uh, marketing in some cases, but then.

Partly, probably aimed for sense hacking was to say, you know, I, I do have morals and scruples and sometimes people would say, no, well, we'll just go back [00:49:00] 10 years ago, people would say, what you say, changing the color of the plate can change this food episode. Stupid go away. Crazy man. Um, then you do it with chefs and then you come back and people go, wow, that's really scary.

Couldn't companies use that and manipulate us to make buy more and eat more. And so, and so finally, that's kind of a best compliment in a way. Isn't it scary. because it fine means that they're taking the science seriously as seriously as I think that they should but then it says the question comes up you know is this ethical given what you could potentially do given what you're telling us um and for that the reason was to publish Sense Hacking in 2021 to try and take the insights I've got from 25 years working with companies around the world and put it in the hands of everyday people to say in your own life, if you want to eat less, this is the color you should paint your walls.

This is the music you listen to at mealtimes. If you want to sleep better, then you can take all the science from your hotel groups and their bedroom colors and apply that to your own life and think about how to kind of optimize the multi sensory environment for work, for play, for, you know, healthcare, um, whatever it might be.

RS: And also if [00:50:00] you're a brand, um, and you want to reduce the sugar in your cereal, say, dangerous at the moment, you'll be penalized because people might say they want to eat healthily, but they end up buying. Tasty stuff. So if you can reduce your sugar imperceptibly because you're counterbalancing it with a different sound or a different shape, it seems to me that there's a wonderful win win situation.

CS: Um, but one that, uh, I think that what I see time and again, from sort of the product taste test taste testing is, um, You can develop the new formulation with less of this, less of that unhealthy ingredient, uh, blind taste tests, people can't tell the difference at all. So you think, great, let's just launch this, uh, with our new 20 percent less sugar, salt, fat, whatever it is.

And as soon as you announce that fact, it does taste different.

RS: Yes, there's definitely a debate of whether you should say it. There's some lovely examples, things like Kraft Mac and Cheese of not changing the formulation, not telling them for three months and then announcing they've changed it and [00:51:00] saying, look, none of you lot noticed this was the world's biggest blind taste test.

Because yeah, otherwise you get this. self fulfilling prophecy of removal of the nasties makes it worse tasting.

CS: And so then, so then some of this, um, some of these multi sensory tricks and techniques may well be being used currently. Um, and I think, you know, I sort of see that, you know, sort of the chefs and the brands might want to draw your attention to these, uh, amazing phenomena.

But they made the world's large food beverage brands. That's not in their interest to do that. Yeah. They just want to give you a great taste experience. However, it got there. And I, so I imagine a lot of them are reducing unhealthy ingredients sometimes by formulation changes, but they can also use these other techniques or, or shapes and colors and textures and, um, and do that.

Um, but that's in the background and sort of hidden really from the consumer as it should be. Um, until at some point, wow, I used to think that was a really unhealthy product. And now I looked at it and it's not as unhealthy as I, what happened? Health by stealth, isn't [00:52:00] it? That's what you call

MAF: it. Health by stealth.

I love it. I love it. As we come to a close, Charles, we always like to ask the same closing question. Our listeners are curious. They're interested in learning, uh, what's the favorite thing that you're reading or watching? What's got you thinking? It could be related to your work, or it could be a personal indulgence that has nothing to do with work.

But what's something that's got Dr. Charles Spence engaged in and interested right now?

RS: Well, I mean, it's all sort of, um, I guess going into that end to, uh

CS: Uh, the history of things kind of sensory history, um, and maybe from hanging around too many anthropologists and multidisciplinary research

forums. Um, so I'm sort of shifting from thinking about, you know, the taste of things right here, right now.

And looking at the history of herbs and [00:53:00] spices and things like the pineapple is a wonderful example that you can find sensory descriptors of this has been the most delicious food flavor on the planet in 1600s when it first arrived in Europe. Um, and the philosophers is trying to say, you know, is this something that you can, um.

Could somebody who's never tasted a pineapple, could you describe the taste of them, because it's so delicious. Because only the king could have one in those days. And then you go through the centuries and actually find the changing descriptors, kind of the sensory history. of flavors, and you do the same thing for pineapples, for potatoes, for herbs, and spices, and, um, it's sort of fascinating, all I'm reading now is all these sort of history, history of, of, of, of food, recipe books, and ingredients, trying to trace these bizarre and intriguing trajectories of black pepper, of chili, of ginger, of bay, of, of, um, of lovage, over a century or, or more.

Oh,

RS: that, that's fascinating. I think the pineapple is one of the most interesting things in that, uh, in, in a lot of country [00:54:00] houses, MichaelAaron and in, in Britain, like really fancy houses, they'll have pineapples built into them 'cause they were the absolute symbol of wealth because it was so hard at a certain stage of before steam travel to get one over from the, the Caribbean.

So the, I think the King Charles, there's a famous painting of him with a pineapple just holding a pineapple. Uh, people, there were, there were, there were stories of people renting pineapples for huge sums of money just for their dinner party. Yeah. Um, and yet once the steamboat hits and they, the price drops, aristocracy wants nothing to do with it.

Suddenly it's, you know, it's not just the taste. It's what it, what it symbolizes. It's a, it's a fascinating, uh,

MAF: Very fascinating. And from our side of the pond, not, uh, we're too young to have ever, uh, had that. Part of our history. Pineapple

CS: fever. Yeah, but you, you in the States and in New York in particular had a celery fever.

Go to, go to the, was it the, um, uh, the Museum in Central Park [00:55:00] Metropolitan, and you have lots of these glass celery holders that were from the very fine tables of the 1800s, this white celery stalks, again, to be hired, so too expensive, and pristine whiteness, put it in the middle, in the centerpiece of your dining table.

And then send it back to the next host or hostess to, uh,

MAF: I had no idea. Dr. Spence for being with us today. Thank you for taking the time to share, um, your work and your thinking with our listeners. Um, much of what we talked about, Richard and I will collect. We're going to drop everything into the show notes for those that are interested in learning more from Dr.

Spence, from the conversations that we've had. We will have them at the ConsumerBehaviourLab. com, uh, in the show notes from today. And as we come to a close, we'd like to invite, uh, the listeners today to follow, subscribe, uh, to our podcast on YouTube. Follow us, uh, [00:56:00] on your podcast, uh, listening channel of choice.

And until next time, I'm MichaelAaron Flicker.

Auto: And I'm Richard Shotton.

MAF: Thank you for being with us, Charles.

Auto: Pleasure.

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