3 Takeaways Podcast Transcript

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Ep. 183: Taste What You're Missing: Surprising Stories and Science About Why Food Tastes Good

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INTRO (male voice): Welcome to the 3 Takeaways podcast, which features short, memorable conversations with the world's best thinkers, business leaders, writers, politicians, scientists, and other newsmakers. Each episode ends with the three key takeaways that person has learned over their lives and their careers. And now your host and board member of schools at Harvard, Princeton, and Columbia, Lynn Thoman.

Lynn Thoman: Hi, everyone. It's Lynn Thoman. Welcome to another 3 Takeaways episode. If you're curious about food, what makes food taste good, why people like some foods and dislike others, and how you can appreciate and enjoy food more, you're going to love this conversation with Barb Stuckey. Barb's whole career has revolved around food. She started by reviewing restaurants, all kinds of restaurants, from cozy neighborhood restaurants to Michelin-starred restaurants. And then she joined the food development company Mattson, where she works as a professional food inventor. Barb and her wonderful book, Taste, helped me become more attuned to a world of tastes, aromas, textures, sights, and sounds that I didn't even know I was missing.

LT: Barb helped me to use her words, see flavors more clearly, hear food more crisply, and glean more detail from everything I ate. I hope our conversation today and Barb's book, Taste, does the same for you. Welcome, Barb, and thanks so much for joining 3 Takeaways today.

Barbara Stuckey: Thank you, Lynn. It's my pleasure to be here.

LT: It is my pleasure as well. Barb, where does taste happen? Is it solely in the mouth?

BS: It happens on your tongue, where your taste buds are. But we also have taste buds on the sides of our mouth, on the roof of our mouth, in the back of our throat. And then, believe it or not, we have taste buds in our stomach, which technically, they are taste buds, even though they are in your stomach. Kind of makes sense that your digestive system would want to know exactly how to start working to digest the food. There's some amount of taste that goes into that. But taste is a term that we use in this country to describe the act of eating soup.

BS: But "taste", and I'm using air quotes here, it's much more complicated than just what is happening on your tongue. Because if you want to be very literal about what happens on your tongue, there are only five things that you can taste using your taste equipment, your sensory taste system alone. And those five things are sweet, sour, bitter, salt and umami, otherwise known as savory or meaty. And so, there's a lot more going on than just what is happening in your mouth. It seems so simple, and yet it really is so complicated.

LT: I was so shocked that the taste that happens in your mouth is only what, about 20% or so of the story of taste?

BS: It's hard to estimate exactly how much it is, but you can assume that your other senses are adding to the experience. The most impactful, in addition to taste, would be smell. So, it's a very interesting conundrum that both taste and smell happen in our mouth. We have five senses, we can see, we can hear, we can touch, we can taste, and we can smell. You'd never confuse the other senses. The reason that we do confuse taste and smell is because of that very fact that they both happen inside your mouth there's one way that you can taste, which is to put food in your mouth, and you have to warm it with the temperature of the inside of your mouth.

BS: And then when you warm the food that's in your mouth, you begin to have the volatiles that are coming off of the food. Those are the volatile aroma molecules. They start to move into your olfactory system. Now, that's what is happening inside your mouth. And that kind of smell is what we call retronasal olfaction. That means the food is already in your mouth, and that the aromas are going up the back of your throat. The other way that we experience smell is when you hold something outside your body. Imagine holding a piece of candy or chocolate or something and smelling it like that. That's called orthonasal olfaction. And those two things are slightly different.

BS: And so, you're getting slightly different experiences, whether you're experiencing the food outside of your body or inside of your body. And the reasons of that are the temperature will differ. And also, when you put food in your mouth and you chew it, you start to break it down, and you start to experience some of the texture and the aromas in your mouth.

LT: Interesting. What happens if we blind taste test? I love your examples of beverages and miscoloring drinks - apple juice, orange juice, and wines. Can you talk about those?

BS: Yeah. Your eyes are so important to your experience of eating. And of course, the eyes are oftentimes viewed as the primary sense for seeing people. It's the sense that you probably rely on the most to get around in this world. And as a result, our sense of seeing is very fast. It happens before other senses are even enabled. And our sight is very accurate, but at the same time, it can easily be fooled. When I was promoting the book, and I was on book tour, we would do these tasting sessions where we would take a glass of white wine and put a couple of drops of red food coloring and a couple of drops of caramel color, which are a brown food coloring, and kind of swirl it together until it resembled a Zinfandel or a Cabernet Sauvignon or some other kind of red wine.

BS: And we would hand these glasses of wine out and I would say, does anyone have a clue what varietal of wine this is? And people would raise their hand, Zinfandel, Cabernet Sauvignon, it's a Pinot Noir. And in truth, it was a Riesling, a very acidic white, which has no flavors that resemble whatsoever those that are in red wine. So, what had happened was the people who were seeing the glass of red wine were fooled by their own sense of seeing. So, our sight is pretty reliable. And we rely on it very heavily and oftentimes at the detriment of other senses. If someone had sat down and you could have put a mask over their eyes and given them the same red colored white wine, I think the results would be very different because of course, they'd be paying attention to it and they wouldn't be led astray by their sense of sight.

LT: It's so interesting. How about if you give someone a glass of orange colored apple juice?

BS: Oh, they will tell you it's orange juice. Absolutely, it's these tricks and in some ways they're party tricks. But the reason that they're party tricks now is because so much research done by

wonderful chemical sensory scientists, have proven that this happens time and again. And it doesn't matter which kind of food you're testing, food or beverage, doesn't matter whether or not the sensory subjects that you're using are people off the street or whether they are professionals - maybe professional wine tasters, professional juice tasters, professional beer makers - all of them are fooled. It's really just human nature for us to rely so much on our sense of sight.

LT: We have not talked much about sound. How does sound or music affect us? Does it have an impact?

BS: Oh, yeah. Yeah. There were some fascinating studies done with sound in the presence of food. A couple of my favorites, one of them is if you're going to do academic research that is controllable and you want to use potato chips, it wouldn't make sense to buy a big bag of regular potato chips because each potato chip is different. But if you want to control the source material that you're using, Pringles, every single Pringle is exactly like the next. So, they're the perfect food for doing research. So, some research was done where people were given Pringles to eat and they were asked to put earphones over their ears and without their knowledge as they were eating the potato chips, someone was adjusting the sound of the crunch.

BS: So, you know when you eat a potato chip and it crunches in your mouth, you can kind of hear it inside your head. This was manipulated while people didn't know it was being manipulated. They thought that the ear coverings were just there to keep other noises out. But in fact, they were turning the sound of the crisp chip experience in your ear up or down. And it turns out, based on the level of sound, when the sound was turned up, people rated those chips as being crispier. When the sound was turned down, and this is just the decibel levels, just the decibel levels, when the sound was turned down, people would say that the chips were not as crispy. Yes, we can be fooled. That's just one example of how sound impacts our experience of food.

BS: Other really fun ones are, there was an experiment done in a wine store where the wine store carried many, many different types of wine. So, there was wine from Spain and wine from Germany and wine from California, wine from France. And one day of the week in the store, they would play nothing but German music. And then the next day, they would play nothing but French music. And then the next day, they would play nothing but Spanish music. And it turns out that without knowing that they were doing it, their customers were coming in. And on the days when the German music was being played, people bought more German wine.

BS: On the days when the French music was playing, people bought more French wine. And, of course, on the days when the Spanish music was playing, people bought more Spanish wine. So, you think you're in control, and you go in and you say, oh, I'm going to buy the bottle of wine that's right for me. But in fact, you can be manipulated with sound as well.

LT: So, interesting. How do salt, sweet, bitter, and sour balance each other?

BS: It's really interesting to think about. Each one of them can play together with the others, and sometimes they're all playing together, sometimes just one or two of them. Because there's five senses and there's five basic tastes, I have these mnemonic devices that I use, one is the sensory star. Those are the five senses that I mentioned, which everybody knows because we learn in school. And then the other one is called the taste star, which most people don't know. Sweet, sour, bitter, salt, and umami are those basic things that we can taste using our taste buds.

BS: And so, when I'm thinking about balancing food, I'm kind of like clicking through my fingers and saying, okay, well, is this soup that I've just created, is it salty enough? Not salty enough. Okay, maybe it needs to be a little salty. Oh, no, I made it too salty. Well, now what do I do? Well, maybe I should add a little bit of acid to balance out the salt, perhaps even a little bit of sweetness. And so, they really can balance each other out. And I think these are excellent exercises for people to do to start understanding how they work together. So, take, for example, your morning coffee. Coffee is known to be very, very bitter. And not many people like their coffee black, but many people do.

BS: So, I can kind of tell a lot about you by how you take your coffee. But the reality is that many people adjust the bitterness of their coffee using something that's sweet. So, that might be sugar, it might be something else like some non-nutritive sweetener, or it might be fat. And so, what they're doing there is they're adding fat to adjust the pH of the coffee, which coffee has a bit of acidity to it. People don't realize that when they're adding sugar or cream or milk to their coffee or oat milk or whatever, they're actually adjusting the basic taste and the texture. Because oftentimes, you're adding a dairy product or a non-dairy product that has fat.

BS: It's just kind of ingrained in us now. We know how to make the coffee taste the way we want it to. But really, what that's doing is helping to balance the bitterness with other basic tastes and texture. It's amazing how strong and powerful these basic tastes are. And they really are the foundation of food. I like to think of them as if you had a paint-by-numbers artwork that you were working on, the dark black lines that are the structural black lines are the basic taste. And what fills in the color is the aromas and the textures, the other senses that you're experiencing. It's a really dynamic system that comes together.

LT: Barb, how can you add complexity to a dish?

BS: Depending on your preferences, there's lots of different ways. One of the ways that I like to think of adding complexity is by going through those five basic tastes first. You can't assume that they're in perfect balance. Are they all in here? If they aren't, which ones are? Is one of them overpowering the others? And then you can dose them with the tastes that are missing. That's why we have salt and pepper on the table so that we can adjust things to our personal preferences. Maybe add a little bit of sugar if it's too bitter or if it's too sour. I like to do something that does not seem intuitive at all, but oftentimes you need to add a little bitter. And I think the majority of people who either follow recipes or cook casually might think that bitter is bad. Bitter is not bad. It's just one of the basic tastes that we experience.

LT: I think it's so interesting that when bars or restaurants play loud music, that it affects how much people eat and drink or how salty or sweet foods are. Can you talk a little about that?

BS: Yeah, sure. I'll tell a story about a favorite restaurant of mine in San Francisco, here where I live. It's a wonderful Italian restaurant run by Craig and Annie Stoll, a married couple. I interviewed Craig when I was writing Taste, and he's a trained chef. And I asked him about his restaurant and what type of food he cooks. And he said, well, I cook Italian food, but I have to cook it through a San Francisco and California lens. And by that, he meant using California ingredients. So, he uses fresh Californian ingredients. But then he also said, I also have to turn up the volume. And that confused me.

BS: So, I said, what do you mean by that? And he explained, well, we were sitting in the restaurant, and he said, look around you. It's quite loud in here. We have a lot of hard surfaces. We have a concrete floor. We have hard table surfaces. There are no table cloths. It's just a hard environment. And it was a very small restaurant, and it was cacophonous to eat there. So, what he was saying is that I have to turn the volume of my flavors up to compete with the noise level in my restaurant. So, he said, if you were to eat the same thing in Italy, any chef in Italy would create a much more subtle dish than what I have to create here to compete with the noise.

BS: And I thought that was just so elegant and beautifully put from someone who doesn't really know the research. He doesn't know that research had been done, and that had been proven to be the case.

LT: Barb, what are the 3 takeaways you'd like to leave the audience with today?

BS: Well, I would start with what to me is so obvious, and that is that you have to eat food. And so, since you're already eating food to survive, you might as well try to get as much pleasure out of that food as you can. And while that seems very logical, it is not something that we all do very often. One of the ways for you to be able to get more enjoyment out of the food is to pay attention to the food. Instead of sitting with a screen open in front of you, sit with your food in front of you, and try to enjoy that in the way that you would enjoy a Netflix movie, thinking about what it is and how it got made, and what stars in it, and what you're expecting from it.

BS: And take your first bite, maybe take a smell of it before you throw it into your mouth, slowly chew it, experience which of the five basic tastes, sweet, sour, bitter, salt and umami you're experiencing. Once you swallow, think about the texture, and so on and so forth. If you have to eat food anyway, and you do, you might as well get as much pleasure out of it as you can. My second takeaway would be around what I call taste empathy, but it's really sensory empathy. We all live in our own sensory worlds. By that I mean that I wear glasses, and you're not wearing glasses right now.

BS: So, there's obviously some sort of difference in our abilities to see. We all have different acuity of hearing. Some people when they age will need to wear hearing aids. Some people have just really naturally good ears where they can hear musical tones. And the same is true for your tasting equipment. So, we all have different numbers of taste buds on our tongue. We have different olfactory systems. We have been through different medical experiences throughout our lifetime, and all of those things can impact your ability to taste, and smell, and experience texture.

BS: So, when you have the same food in front of you, as someone who's sitting right across from you, even though it might be the same apple that you just cut in half and you're each eating it, you can't possibly understand what that person is experiencing because their sensory systems are not your own. So, when they say, "Oh, you like this Lucy Glo apple? Ugh, I don't like it." Maybe there's a reason. Maybe they're getting something that you are not. And so that's where taste empathy really comes in or sensory empathy so that you can really understand that they may be coming from a very different experience sensually than what you are having.

BS: My third takeaway is learn how to cook using your senses. Most people rely on recipes when they cook, and there's nothing wrong with that. And it's not that you'll never need another recipe. I use them all the time myself. But when you get to the nuances of cooking, and perhaps you've

already made the recipe once or twice, you can put that recipe aside and rely on your senses. And maybe you don't remember the exact amount of salt that you're meant to add to this dish, or what the source of acidity is. Was it lemon or vinegar?

BS: I can't remember. Or any of the other number of ingredients that might be in the recipe. But if you trust yourself and you learn to trust that you will know when you taste the food, whether it needs more salt, more sweet, more sour, more umami, or sometimes counterintuitively more bitterness, you'll start to have more confidence in the kitchen.

BS: That's really how you're going to learn how to cook like a professional. By just throwing things together, experimenting with it, seeing what works, what doesn't work, what enhances the flavors you want to enhance, what mutes the flavors that you don't want to maybe be muted. Learning those things can really only be done by experimenting with food. So, I highly recommend playing around with your food to get more and more confident in the kitchen.

LT: Barb, this has been wonderful. I really enjoyed your book Taste. Thank you.

BS: Thank you so much, Lynn, for having me. I really appreciate it. And keep doing the great podcast work.

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