Paleo Solution-308

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Robb Wolf: Hi, folks! Robb Wolf here with another edition of the Paleo Solution podcast. I'm very excited for today's guest. I received a copy of *The Dorito Effect* several months ago. I was immediately intrigued by the premise of the book. I've been pretty interested in the neuro regulation of appetite. I think that this is a stone that has not been adequately looked under within the whole health medical fitness wellness scene. The author is Mark Schatzker. He is also the author of the book *Steak.*

Mark, I'm incredibly excited to have here today.

Mark Schatzker: It's great to be here. Thanks, Robb.

Robb Wolf: Yeah, yeah thank you. So Mark give folks a little bit of your background.

Mark Schatzker: Yeah. Well as you said my first book was *Steak: One Man's Search for the World Tastiest Piece of Beef.* It was also the world's best assignment ever.

Robb Wolf: I bet.

Mark Schatzker: I really got into grass fed beef when I did that book. It's not really what I expected but it was really journey geographically, I travelled the world. But it was also a journey in terms of understanding. It wasn't just about eating beef. It was also understanding cows.

One of the big surprise of that book was the way cows eat. We drive by cows in the highway and you just sort of see them eating grass and they seem dumb and that's what everybody thinks. But when you start to talk to foraging experts and people who really understand cows, this whole new world opens up. I even raised my own cow when I wrote that book and one of the most amazing things was to watch her eat grass, which I can do for hours.

She used to hover her nose over this patch of grass, decides to take a bite of clover then hover over another 5 feet of grass, not eat anything and then go for this clump. And I thought what's going on, why is she being so picky?

What's amazing about cows is that they meet their own nutritional requirements. For example a pregnant cow has a higher protein requirement than a non-pregnant cow because she's got a fetus to

nourish and that pregnant cow without ever having read an issue of Men's Health or got a degree in nutrition somehow knows that it should be eating forages like clover or alfalfa and not the more sugary grasses that are out there in the field. The way they know is this is through taste. They eat what they want to eat but what's so interesting about cows especially the ones out there in a pasture is that what they want to eat is what's good for them.

This light bulb went off because that's now how we think about food. The narrative for the past 50 years is that the foods we want to eat are bad for us. That's the stuff getting us into trouble. So is start to scratch my head and go what's going on? Because if you start to think about it from the point of view of evolution, how could we have designed to eat ourselves to death. It doesn't really make sense.

Robb Wolf: Right.

Mark Schatzker: So that was the jumping off point for this book which is really an investigation of flavor and deliciousness. Why we like what we like and more importantly where that went wrong.

Robb Wolf: Oh, I love it. I did a talk for PaleoFX last year and the premise was it's not your fault. The omnivore's real dilemma and you know kind of got into optimum foraging strategy and you know this whole idea of palate fatigue even if we're faced with a really tasty pile of food that at some point the palate sensory that we have for that will fatigue out and our desire for that food will plateau out and so we kind of shift gears.

Again from like an ancestral health revolutionary biology perspective that that was probably a good adaptive response in the past but now when we walk down a snack food aisle and I think there's like 50,000 food like substances in a given supermarket these days. There's like 11,000 new food like substances every year that are released and they come in a dizzying array of palate sensations and flavors and flavor combinations. Now you're able to bypass that neuro regulation of appetite and just keep eating and eating which is I believe a lot of what you talk about in *The Dorito Effect.*

Mark Schatzker: Yeah. But what's so interesting to me is that the lens for which we have used to understand the foods we shouldn't eat has been nutritional. For a long time, we were talking about fat is the enemy. We talk at having conversations about carbs things like high fructose corn syrup and that's totally valid as a way of investigating food's effect on the body. When these nutrients get into your stomach and get into your blood stream and

so forth. They do have effects in the body but the question we don't ask is why are these foods getting into our stomach in the first place and that has to do with behavior. That has to do with a different part of your brain. That's eating. That's what I think we need to crack if we want to understand because there are so many people out there who are--it's like addiction in the sense that there're so many people eating foods they know they shouldn't be eating but they can't resist.

Robb Wolf: Again maybe--you know the podcast does have a lot of kind of paleo oriented geeks, why was that historically not a problem? You know up until pretty recently, people managed to generally enjoy their food. I guess throughout most of recorded history there have been instances of obesity and maybe some diabetes and whatnot from overconsumption of food but why is that generally not been a problem and why is it so much of a problem now?

Mark Schatzker: And why has it gone so bad?

Robb Wolf: Yeah.

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Mark Schatzker: Yeah. Because everyone says oh, what about king Henry VIII. He was really fat whatever. And yes, there are cases here and there but for the most part when you look at the graph of obesity and things like extreme obesity, it really started to take off in the '70s. One of the reasons is a kind of an arrogance and I think people have always thought oh I can figure this out. Obesity is really simple. It's calories, calories in versus calories out. On some level that's true but that doesn't really explain why people eat. You know rich people in the 1940s could afford all the calories they want but somehow they were able to hold off.

So what changed? Well what I look at in *The Dorito Effect* is the way flavor changed, the flavor of food. It has changed in two really fundamental ways and I want to tell you a story that I think illustrates it all. In the early 1960s, a Madison Avenue, an ad man a guy who worked on the Jello pudding account, he worked on a Campbell Soup account. He was hired by the Frito Company to be the vice president and sales of marketing for Frito corn chips. Shortly after that, merged with Lay potato chip company and become Frito-Lay. Everyone knows what Frito-Lay.

This guy took his kids on a trip on southern California and he was driving I think down towards San Diego and they passed what his daughter described to me is a little Mexican shack in the side of the road. The VP of sales marketing for Fritos ate a tortilla chip and he was stricken by this idea. Tortilla chips are going to be the next big thing for Frito-Lay. So he

brought the idea back to Dallas, presented it to the corporate bigwigs and they shut him down. They said why would we serve tortilla chips when we already have Fritos? Which are kind of the same thing, pretty similar.

Robb Wolf: Right.

Mark Schatzker: But he knew better. He actually funneled discretionary funds into an offsite facility to develop the tortilla chip concept. He re-pitched it. He gave it a name that sort of meant, in a **bastardized pigeon** Spanish meant pieces of gold. And he said gentlemen, I give you Doritos and that's when Doritos was born. But here's the most interesting thing that nobody knows Doritos. The very first incarnation of Doritos was just salted tortilla chips and they bombed. Nobody was interested in eating. In the south west in Texas where there was a Hispanic cultural influence and people knew you can deep these things in guacamole or put ground beef on them or something. You know yeah, tortilla chips are great. Everyone else didn't really get them.

So then this is when the big changed happened. He went back up in front of the corporate bigwigs and said what are you going to do about Doritos and he said let's make them taste like taco. And this was a momentous defining event in our food system. This had never before really been possible. It had already now being possible in the '60s because of the invention of a device called gas chromatograph about 10 years earlier which let us figure out what flavor chemicals are and once we figure out what they are, we started adding them to food and when we had that technology that gave us the ability to make a tortilla chip taste like a food that wasn't.

Nutritionally it was the same. It was just processed carbs, fried and fat. But from a sensory point of view this thing it didn't taste exactly like a taco but it had that depth that had that meaty zing that makes people go this is delicious. So a snack that bombed that they couldn't sell became a snack that people couldn't stop eating and we've all been there. Everyone's had that experience with Doritos where you had like a party or something and you put one in your mouth and that's it because you can't stop eating. And this illustrates two things. It illustrates how our food systems changed but it also illustrates the power of flavor chemicals, flavorings, to get us to eat food we normally would not be inclined to eat.

Robb Wolf: Wow. Wow. And you know it's so funny because my background is in organic and biochemistry. I remember that the food chemistry route was one of the more lucrative but completely like looked down up tracks that

somebody could head down. You were almost guaranteed a good income. Chemists really don't make all that much money particularly coming out of a state school from Chico State. You mainly do that to make psilocybin and stuff like that. So it's a completely different route but there were always jobs for food chemists and I always like to joke that the you know our modern food supply is keeping all these food chemists off the streets and preventing them from writing and breaking bad and doing all that type of stuff. So that really resonates with me.

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Mark Schatzker: Yeah. And it's funny too because speaking of chemistry and nutrition. These different departments study totally different things. So if you go in the nutrition department they're very focused on these nutrients but when you talk to the food scientists about what makes people want to eat food? You know adding fat and salt that's kind of the easy part. It's these flavor chemicals that separate the brilliant ones from the ones that are trying.

Robb Wolf: Mark, maybe you could comment on that a little bit because it has felt like there's just this incredible blind alley when you get into the nutritional scientist on the one hand because they are trying to be a "science" who are trying to be very quantitative. They want to/ weigh and measure everything and they're definitely in that calories in calories out story which like you eluded to if we're locked in a metabolic ward and people are being frisked to make sure that they're not sneaking in sneakers or something. you know if you starve people down to lose some weight but free living humans just can't seem to make this process work.

But on the one hand the nutritional science folks, the registered dieticians and not all of them. I apologize. I know a lot of folks who have really changed over the years but I've been doing this like 20 years and the battles that I've had have been epic. But on the one hand they're trying to be very quantitative but then on the other hand they tell us you shouldn't exclude any food groups and this includes Twinkies or Doritos or what have you. So everything gets lumped into protein carbs fat even though the satiety signals are vastly different. Like what's the disconnect within organized nutritional science?

Mark Schatzker: I think the problem is that nutritional science most of the time, not always and like you say there're lots of open minded people doing really interesting work but it's often reductionistic and it's not looking at the behavior. It's looking at the physiology. How does your body convert carbs to fat? How does your body convert fat to fat? Is there a difference between fructose and sucrose? Those kinds of questions and like I said

they're not invalid but they just don't explain the behavior. I think that's been the problem.

I think the other problem is we talk about these flavor chemicals. The important thing to know is that they're not toxic in the sense that they'll give you cancer or Alzheimer's. They're also totally non-caloric. So right off the bat like going back decades, the nutritionist sort of said who cares about flavor chemicals, they don't put on pounds. They exist in parts per trillion or parts per billion. They have nothing to do with metabolism, the stuff going on inside the body. So I think they kind of gave up on it in the early going and the real insights have come from people like ecologists and animal scientists who are not so bent on physiology. They're more understanding a whole system--

Robb Wolf: Systems based.

Mark Schatzker: How animals exist in an environment. What are the behavioral triggers? The other important thing is that it's easier to do experiments on animals. That's why we've gotten further ahead because you can do stuff to sheep and goats and rats that you cannot do to human and that's why they know more.

Robb Wolf: And I guess it's always a slippery slope to extrapolate anything from animal models to human models but for me again this is where this evolutionary template for me is so powerful and at least the hypothesis generation. You know could super stimulatory flavors cause a problem for folks? We've been in this macro nutrient war, high carb is better or low carb is better and we see success. Both ends of the spectrum, we see success in the middle but you know I got to say the one consistency that I've found and this again is something that flies in complete opposition to most of what nutritional science tells us to do. The one consistency that I've found is that you need to limit palate options if you're going to be successful which they try to paint as orthorexia or disordered eating now.

Mark Schatzker: That's interesting. I think the other problem too is that they sometimes have a simplistic way of talking about palatability. Nutritionist and people in that realm will talk about hyperpalatable foods like McDonald milkshakes or Twinkies or potato chips. But it's interesting I'm very much of a food guy. I love food. I got into this by travel writing and writing about restaurants. When you go to the kind of the upper tier of food experiences and I'm not thing to say this with an element of you know trying to be judgmental. But when you look at what foodies are really into, they're not cramming our faces full of Twinkies. They don't like that stuff.

They're into fine wines. They're into foraging for mushrooms. They're into grass fed beef. They're into heirloom chicken. These are not all--they're not going for calories. They're not like give me the absolute maximum amount of calories. They're into nuance. They're into like things like kale and it just does not jive with this hyper palatability. I want to--I guess ask some nutritionist who thinks this stuff is all that palatable? I mean you know everyone whatever some people like Twinkies but no one really considers the Twinkie the epitome of a culinary experience.

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Robb Wolf: Right. But it's fascinating to me that some of these foods like Doritos you know the ad campaign for Lays potato chips that you can't eat just one and they will win that one all day long. Like you definitely don't want to short that proposition in any way.

Mark Schatzker: You're right. You're absolutely right. That you can't eat just one is absolutely correct. But what I would say and we've all been on that stage where you can't just eat just one. But no one would walk away from that saying my gosh that was the most delicious thing I've ever eaten. They manage to get you into this pattern. They call it hand to mouth where you just wanting to eat more and more. But that to me is a different culinary or eating experience than let's say like a piece of dark chocolate where you only have an ounce and you sit there and you're like oh my god, like the flavors in this thing are amazing and then you're done.

It's the same--You know when I wrote the *Steak* book, the interesting to me to be a grass fed steak was how delicious it was, how it remained delicious all the way through. You weren't sick of it halfway and then how afterwards, you didn't have this food coma like you need to go lie down the coach for half an hour.

Robb Wolf: Right.

Mark Schatzker: Those are parts of the eating experience we don't talk about. I mean it's just an experiential as that in the moment crunch.

Robb Wolf: This is maybe a super far field analogy and if it sucks jump on me with both feet and be merciless with it. You know like in Peru and different areas in South America, culturally people have chewed coca leaves which contained cocaine alkaloids and they've done this for thousands of years. It's really woven into the culture. People enjoy it. It tends to make more focused. It releases dopamine and so there's all kinds of good stuff with that.

But you don’t really see over addiction until we see a processing of the coca leaf, concentration of that cocaine and then a stimulation of the brain that again you know kind of… I don’t want to drive this thing too much into the super normal stimuli. But could there be an analogy there between like really good artisanal food you know being this really nice sensory experience but not pushing the sensory experience so far that it literally kind of breaks something in our neurological circuitry. Do you think there's something to that?

Mark Schatzker: Yeah. I think there is. I think it's a puzzle we haven’t totally unraveled but what I tend to think of is eating food can be a "good addiction" which is to say if you're into food that's healthy but also delicious and I think there's lots of examples of this. I love sashimi, not just grass fed beef. I love heirloom chicken. I love really amazing heirloom tomatoes. Those don’t--I mean that's just a completely different nutrition speaking proposition than drinking soda and gorging on potato chips. I can crave those foods. I think about those foods but my relationship with them is much more positive in the sense that you don’t feel like crap after you eat them.

Robb Wolf: Right.

Mark Schatzker: So yes, I think there is something to that. I think we have managed to create food that is really hard to resist. I mean it's taken a lot of us to some really bad places.

Robb Wolf: Yeah. You just made me think of a lot of clients that I've worked with that their dietary kind of patterns focus so much on again I'll call them these hyperpalatable foods. That the proposition of grass fed steak, heirloom tomatoes like these people would tell me that that stuff literally tastes like cardboard which was kind of stunning to me. You know it was a week's or month's long process of kind of dialing down some of the more refined foods, the hyperpalatable foods, sneaking in some of this other stuff and you know eventually we would get these folks to success.

And another thought that I've had with my two daughters, one is three and a half years old, one is a year and a half. They've had some like 90% dark chocolate. We made some gluten free like almond flour cookies and stuff like that and they're really, really good. But what was interesting they've been over to a couple of friend's houses and they had some standard chocolate you know like milk chocolate stuff or they had like a regular cookie and they literally won't eat it. Like they have a bite of it and they're just like and they get shut down.

But I could see where over the course of time, if the main exposure that they had was this really super sweet, hyperpalatable type food that they would probably shift the other way. There's a video going around Facebook where it shows kids having their first try of dark chocolate and like the kids look like their eating a cat turd or something like that. But it's completely different experience that my girls have with that.

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Mark Schatzker: Listen the palate is like a language, it's something you learn. I remember my daughter eating chocolate cake for the first time. We gave it to her I think for a first birthday or something. And we all thought she was just going to absolutely--

Robb Wolf: Smash it.

Mark Schatzker: Gobble it down and this wasn't dark chocolate. This was just standard sort of chocolate cake and she didn't know what she thought of it. All new food experiences are new to begin with and it's what you expose the palate too. So I've had the same thing with my kids. I don't try to give them too strict of eating regime because I don't want them to rebel later but I really try to influence them in a positive way also understanding that kids are kids. They run, they don't walk and they burn a lot of energy so there's a reason they like those energy dense foods.

But the same thing my kids like dark chocolate and I'm often pleased because we'll be in a restaurant or something or birthday party, they make one of those huge servings of really low end super sweet ice cream and they'll have a few bites and then they sort of stop. So it's very much about what you're exposed to.

But the other thing I want to say is that when we talk about these hyperpalatable foods, again it just doesn't come down to nutrients, the sugar, the carbs. What we fail to realize is that so often the food companies creating those foods actually steal tricks from nature. So if you look at cola for example. Cola is mainly citrus flavoring. There's also cinnamon flavoring in there and some vanilla. It doesn't taste like those things because we created a combination that is to some degree unrecognizable but that deliciousness comes from the fact that cola is imitating nature. If it was just the sugar that made us love soda, we would have sodas out there that would just be carbonated water with sugar but nobody wants to drink that. It's the flavorings that make soda delicious and those flavorings are stolen from healthy things like fruit. And that's how we fool ourselves. The body is not completely stupid but we're sending it absolutely deceptive signals.

Robb Wolf: Mark, another thing kind of popped into my head. As I have been researching the hyperpalatabilty of food and maybe the behavior or the neurological triggers behind overeating, I went down kind of an interesting route and I started researching professional food eaters like people who would eat--who was the Japanese guy that would eat all the hotdogs.

Mark Schatzker: Oh, I remember him. I can't remember his--

Robb Wolf: Yeah. I want to say Fukushima but that was a disaster of a different type. But what these folks would do what they figured out and there's this interesting rubrics online you know like if you're eating ice cream and you've got to eat 5 pounds of ice cream in like 30 minutes or something some of the things that they recommend is **[0:23:13] [Indiscernible]** when you bottom out and you're starting to feel nauseous from the ice cream, they're order like some extra salty, extra crunchy savory French fries and again it kind befuddles the standard calories in, calories out fill your belly dietetics perspective because we're actually sticking more food in their stomach.

But when they actually do a flavor switch then they are able to take that moment where they were feeling full and feeling maybe even nauseous from eating this one type of flavor. They shift gears, try a little bit of a different type of food and then they're able to successfully finish the eating challenge. In the back of my head I've had this sense that the way that we construct our flavors particularly with these highly processed foods, we eat like professional eaters.

Mark Schatzker: Yes. Yeah. I mean and that's what it's designed to do. But I think the thing to also remember is that those flavor signals have been corrupted but in good food they take you to a very good place and that's what we haven't focused on. I think one of the reasons that so many diets fail that people find it so hard to stay on a healthy diet is that a lot of our real unprocessed food just taste so bland now and it didn't always and that's you know nobody wants to eat utterly bland food.

Robb Wolf: And you make that point in your book. You know we have these tomatoes that look incredibly red and vibrant but yet they have no flavor like why is that?

Mark Schatzker: So this is the other part of *The Dorito Effect*. One aspect of it is that flavor chemicals, flavor technology has gone incredibly potent and we make--and by the way it's not just potato chips and soda, we're putting flavorings in soy milk, in yogurt, in frozen pizzas. If you look at the

ingredients for any of the fast food restaurants that care to share them. You see artificial and natural flavorings everywhere. This stuff is everywhere. Americans consume about 600 million pounds per year. Now remember this stuff does measure parts per billion. So 600 million pounds is just a staggering amount.

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So that's one big problem but the other problem is that the whole foods that we grow are getting blander and it's essentially the fault of agricultural technology. Since about the late 1940s, we have gotten really good at producing lots and lots and lots of food. On some level, that's a huge success story. There're a lot of mouths to feed. We brought the price of food down. But what we never talk about is the qualitative change. It's something that grandparents and great grandparents talk about when they say things like oh, I haven't had a good strawberry in 30 years or chicken doesn't taste anything like it used to.

They are absolutely correct. That is all true and the reason is selective breeding. We keep on breeding for the traits that make money. So for things like chicken that will be how fast that they grow and how much meat is there. For things like strawberries and tomatoes, it's how plump are they, how big is the crop, what's the shelf life, what is the disease resistance like will they resist these mildew diseases that come and destroy other plants and so forth. That's not inherently evil, but the problem is every time people are making selections like that and they're not selecting for flavor, you lose flavors. It's in effect reverse evolutionary pressure.

We are reducing the genetic diversity of flavor and we have effectively created strawberries and tomatoes that don't know how to be flavorful anymore, even if you grow them organically and you sing them lullabies before they go to bed, they will not be flavorful. They don't have the ability to pleasure us and that's a huge problem because if you want people to eat health food and it sucks, a) they might not eat it b) what are they going to do with that strawberry. They're going to put whip cream on it. What are they going to do to that tomato? They are going to put ranch dressing on it. But the interesting thing about those foods when they taste the way they should is that they're amazing all on their own and you'd actually say it would be a crime to put whip cream on the strawberries they are so good. And maybe on the tomato, you'd only put a speck of sea salt and a little bit of olive oil, but gosh, you would pull it out like a bottle of ranch dressing off the shelf where the tomato that good, it would be a crime.

The tomato is in fact really interesting because there is a guy at the University of Florida named Harry Klee who spent about more than 20 years researching tomatoes trying to make better tomatoes. The most interesting thing he found amongst a whole host of really fascinating findings is where flavor comes from the tomatoes. Initially, he found there is something like 400 different flavor chemicals in tomatoes where it sounds like a lot, it is a lot, but what's so interesting is that the human brain just ignores the vast, vast majority and there is about 20 flavor compounds in tomatoes that really drive liking. If those flavor chemicals, they are on the right amount, you and I will be buying that tomato and go, oh my gosh, that is an amazing tomato. If they're not there, we go, huh, that tomato tastes like cardboard. These flavor chemicals can actually enhance the sweetness of a tomato independent of the sugar. So you can have tomato that tastes sweet, but actually has less sugar and this isn't like an artificial sweetener thing. This is all happening in your nose and in your brain.

What is so interesting is that when he looked at how the tomato synthesizes these 20 crucial flavors, they all come from essential nutrients in tomatoes, carotenoids, essential amino acids, omega 3s. So from that point of view, you can think of the flavor of a tomato as a big chemical sign that's telling your brain I am full of good stuff, come and eat me, I'm good for you. So that's how our flavor system -- that's how it evolved. It evolved to find stuff that was good for us, nutrients that our bodies needed and of course, it did.

How would our species have survived as long as it did if we had absolutely no idea what to eat? There had to be some system by which out there in nature where you could procure not only the macronutrients, but the micronutrients that were essential to survival.

But what happened a little over 50 years ago is that we got the ability to pick out those flavor chemicals in a tomato and then manufacture them in a factory and start to put them in ketchup flavored potato chips or a frozen pizza. So we captured the thrill of the tomato experience, but what we left behind was the nutrition and that's how we have really screwed ourselves up.

Robb Wolf: So we're basically getting what we should have had out of the tomato, but we're getting it in ketchup flavored potato chips now?

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Mark Schatzker: Exactly. Yes. It's that in the moment thrill. You're brain going, hey, I'm getting some good signals from this thing, but that's not what we deliver to our body.

Robb Wolf: So this is a little bit of a side note, but I'm definitely into sustainability and whatnot. Where do you look to try to get more flavorful produce? Let's say that you're doing a small family garden or family farm or something like that, is this where we just have to go back to the heirloom varieties and really focus on those?

Mark Schatzker: I think heirloom varies are great place to start. Anyone who is interested in farmers markets or home gardening may have already discovered that. I've had heirloom carrots that have been extraordinary. I've had heirloom tomatoes that literally brought me to tears. In fact, I would argue those foods are more hyperpalatable than Twinkies and so forth. You don't binge on the, but they have brought me to greater heights than any processed food has ever brought me too, but heirloom is a great place to start, but here's the problem with heirloom. The yields are pretty low.

No one has been breeding vegetables and fruit that taste good for about 50 years. So they are more expensive and it would be a real challenge to feed our whole population with them. But where there is hope, it is in the work for example that this guy Harry Klee is doing. He's trying to create a modern tomato that has the flavor of an heirloom, so that we can get the quantity, we can get the shelf life. These are not inherently evil things, but we can also keep the flavor, and he has succeeded in doing that.

What is massively depressing is that he offered these tomatoes up to the big tomato growers and none of them wanted it because they just want the absolute cheapest most pickable tomato possible. But I've actually been working with the online grocery in New York called Fresh Direct. They found a greenhouse grower that's growing these tomatoes. So hopefully, in a few months, this will actually be in the market not across the country, but it's a start. You got to start somewhere.

Robb Wolf: Right, right, absolutely, yeah.

Mark Schatzker: And by the way, to all those people who say, oh, you'll never change the American palate, you will never change the American system, look at how our palate for wine and dark chocolate and craft beer has changed last 20 years. If mean, if you took someone from 20 or 30 years ago in a time machine and show them the craft beer now, they would not believe it. So I think there is absolutely hope and I think some things are starting to move in the right direction.

Robb Wolf: I completely agree, and I mean, it's interesting even than more processed foods scene like you're seeing much more emphasis on kind of Hispanic or South East Asian derived foods like sriracha flavors and hot and spicy flavors that in the '70s or '80s like there would have been no market for that, like people would have been horrified by that stuff, but now, I think maybe 10 years ago, Salsa eclipse ketchup is the most common condiment used in the United States, so clearly these things can change.

Mark Schatzker: Yes and our palates have always been flexed to some degree and it will keep moving. I think the key is just getting flavor back into real food and out of the fake stuff.

Robb Wolf: It's so interesting. That's an angle on it that I had not considered that we kind of have the dial pushing in two different directions. One, that we have this kind of frankenfoods that are stealing elements of nature to make them more palatable and then the good foods, the wholesome foods have actually become less palatable and so bridging that gap has become even more challenging than what I had really appreciated.

Mark Schatzker: Yeah and know exactly. I think also, we've all been so trained to think in terms of nutrients that I should be eating protein or I should be eating this. That's really hard to do unless you're very educated and you're really good at reading those back of the package panels. If you eat real food that you find delicious, I think you will do okay.

Robb Wolf: Right.

Mark Schatzker: I noticed my own palate has totally changed. When you think about it at a certain level, if you go to countries like Japan and Italy, those people are not so hang up on diets as we are. Yet for the most part, they eat a lot better than we do because they're just focused on real ingredients that have a fine quality and it's not just the rich people. Overall, they value real food more than we do.

Robb Wolf: So you have one -- I'm thinking like 50 different things. I'm trying to narrow it down, but I wanted you to talk about one subchapter that you have, Chapter 7, Fried Chicken Saved My Life. Talk to folks about that.

Mark Schatzker: Yeah. Well I said some very disparaging things about chicken in my *Steak* book. I had totally given up on chicken. I just thought there was no hope for it. It was incredibly bland. To make chicken taste good, you had to like brine it, marinate it, put a rub on it, roll it in panko and fry it and then put like barbecue sauce on it or something.

Robb Wolf: Which is a basic question could you have done that with like Library paste and ended up with the same result.

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Mark Schatzker: Right and so much for your like healthy low fat meat, right.

Robb Wolf: Right.

Mark Schatzker: So I've given up on it and I got this interesting email from my character in California named Douglas Hayes, who said love your *Steak* book. We need to have a conversation about chicken. This is hilarious to me. I thought that was great. Someone's reaching out to me to talk to me off the cliff on chicken, but Douglas Hayes is an heirloom chicken enthusiast. He grows a variety of chicken called buckeye chickens, which were popular around the 1920s and they are endangered chicken now. But he got me to try -- what I had not realized was how radically chickens have changed. I've been focusing on beef and we haven't changed it. We've changed the genetics of beef cattle a bit. We've really changed what they eat, but chickens, we've utterly changed the genetics of chickens.

Chickens grow about 3 times faster than they did in our grandparent's era. If you went to a butcher shop in the 1940s and bought a chicken to feed your family, that chicken would have been anywhere from 14 to 18 weeks old. That chicken now is 6 weeks old. That chicken doesn't live outdoors. It eats an utterly processed feed, usually corn and soybeans with all sorts of vitamins and limiting amino acids added in and it just grows super quickly and it has no flavor. It has absolutely no flavor. So one of the kinds of the experiments, one of the transformative experiences in this book was that I went out and found -- I got a farmer friend of mine to grow some heirloom chickens, not buckeyes, but a different variety called barred rock. This was the celebrity chicken of the 1940s. That was its heyday and I've got what's called a fryer.

Now, we've all heard these words, roaster, fryers, fowls, broiler. Most of us don't know what it means. The reason is that it doesn't actually mean anything anymore, but 50 years ago, it used to refer the age of a chicken. So the earliest chicken you would eat would be a puset, which would be like half a pound or a pound, just barely out of the chick stage. That would be a very fancy dinner, extremely tender, not very flavorful, but kind of a special occasion treat.

Then you move up to a fryer, which would have been around 2 and half pounds and that would have been like 12 to 14 weeks old, so already way older than a chicken of today and much smaller. Then you move up to a roaster and then you move up to fowl, which would be like an egg-laying

chicken that was 1 or 2 years older, even a rooster, and those would have the toughest meat, but just like mind-boggling flavors.

So that's why a classic coq au vin is made with a rooster. You've got to cook it for like 1 or 2 days. It will get tender and the flavor will absolutely rock your world. So I got this farmer to raise barred rocks to the fryer stage, like I said, about 2 and a half pounds. I brought it home, kind of looked at the thing and it didn't look like a chicken. It looked like a dead bird. I never had it before, but it just looked, I mean, this sound weird. It looked like a corpse. Modern chickens don't look that way. They've very puffy and round. They look more like the women playboy or something.

Robb Wolf: Right, right.

Mark Schatzker: And I was just like oh my god, like this is crazy. Then this knock comes out of the door and a friend of my wife is moving the next day. She's just came back to say goodbye. She's with her fiance . My wife invites them and why don't you stay for dinner and I'm like what are you doing. We got 2 and a half pounds of chicken and you just invited guests. So anyway, I'm like, okay, well, I guess we'll like cook up a lot of corn or do something.

So I cut this chicken into pieces. I put salt and pepper on it, which is what fried chicken must be called for 50 years ago or hundred years ago. Now by the way, celebrity chef will brine their chicken in liquid smoke and Dr. pepper. They put MSG on it. They put about 10 different herbs and spices. They put in buttermilk and make a biscuit crust. People didn't use to do that. Fried chicken was just salt and pepper. You dredge it in flour and then you shallow fry. When it's kind of brown, you just put a little sip of water in the pan, put a cover on it and then it cooks out the dark meats to toast tender, then you re-crisp it on a high heat and you eat it. Well, by the time I finished cooking it this way, it was even smaller than before and I'm like this is an appetizer.

Robb Wolf: We're going out to eat after this.

Mark Schatzker: Exactly. This is kind of pay and then we'll call Dominos or something, like what are we going to do. Anyway, I served this dinner and it was chicken rapture. I mean, I should have recorded it because just the noises people are making were hilarious. It would have sound like an orgy or something in the other room. Everyone declared it was by far the best chicken they had ever eaten and the most amazing thing is there were leftovers.

Robb Wolf: Wow.

Mark Schatzker: The chicken was utterly delicious and yet satisfying. You just stopped. It wasn't like, oh I've had too much. I'm getting palate fatigue. It was just -- that was great. I'm ready to move on. I like it. We get this sometimes with fruit. I love peaches. I adore good summer peach and when peaches are at their peak, I sort of maxed out of two peaches and then I'm done and it's not like I'm sick of them. I'm just done and that's what food is supposed to do. You're supposed to eat it and enjoy it and then be done. You're not supposed to binge on it and fight this inner war about, oh my gosh, how do I stop eating.

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Robb Wolf: Oh man. It's fascinating. So we are growing chickens here on the Lazy Lobo Ranch where we moved about 6 months ago. We have some Dorper sheep coming in. The chickens are not heirloom varieties, but I'm wondering if the fact that probably 95% of what they eat is just forage from around the farm here. Is that going to have a significant difference in their flavor?

Mark Schatzker: Absolutely.

Robb Wolf: Okay.

Mark Schatzker: It totally will and that's where the flavor comes from. It comes from what chickens eat. Again, you get this connection, this nexus of flavor and nutrition. When you look at the nutritional profile of chickens that are older and forage more, it's totally different that modern chicken. It's denser in vitamins, but here's the most interesting thing. We often talk about this long chain omega 3s and this is why you got to eat salmon and macros because these long chain omega 3 like DHA. Well, the most amazing thing is chickens can actually make DHA from simple omega 3 in grass. They just need to live long enough to do it. Chickens used to be a significant source of DHA. They just aren't anymore, but they could be if we grew the right chicken.

Robb Wolf: I know for sure, like the eggs that we have are stunningly -- they're orange, they're not yellow and I mean like…

Mark Schatzker: It's like a sunset or something.

Robb Wolf: Yeah, road cone orange and I make some omelets with it and I cook it on really low heat and both the 3 and half year old and the 1 and a half year old will eat a whole 2-egg omelet. I'll take a little bit of goat cheese and I've been getting some of that from like a local outfit here and it is amazing and these girls just crushed this stuff.

When I get up in the morning and I'm like what do you want for breakfast and both girls are like omelet, omelet and they destroy the stuff. At the beginning of the winter, the egg production really dropped down and also the forage dropped off for the chickens because everything was kind of under snow and whatnot. So we bought some store-bought eggs. We kind of compared that with some eggs that we got from our chickens, but we have been supplementing with some kale and some other greens and they were still noticeably better than the store-bought eggs, but it was interesting like the girls would eat about half their omelet from the store-bought eggs. It was really a startling difference.

Mark Schatzker: It is and that's the kind of thing we don't talk about and it's kind of a cultural thing. Like North Americans are really fixated on price and that's why we went for the cheapest everything. But what is so interesting is if you look at the cookbooks, people knew something was up with chicken. Julie Child said as much in 1961 when mastering out of French cooking came out. She said modern breeding and farming techniques have done wonders to make chickens plump and cheap, but they leave a lot to be desired when it comes to flavor. She said a chicken should be good perfectly owned just a simple buttery roast and that's just not true anymore. You can't roast a chicken simply. It just tastes like wet paper towel.

I found a recipe book by Paula Wolfert from the mid-'70s saying the same thing. The really good cooks and chefs knew something was wrong. What's interesting is in France, when people start to notice something was wrong with chicken, they created a standard for different kind of chicken called the label rouge, which had basically said if you want to be a label rouge chicken, you got to be an heirloom chicken. You got to be at least 84 days old. You got to have access to the outdoors. You have to get outdoors. It's not just as theoretical oh, well if you went through that door, you'd be outside. These chickens go outside. They eat forage. You see in the color of their skin.

Some of us noticed it, but our food system just went in for cheap commodity stuff. There is lot of reasons for that. I don't have a simple answer for that, but people notice it. You notice it. I've notice it. There are so many people I've talked to who have had these experiences. Sometimes, they get it when they go travelling. They go to Italy or Greece and have an egg or a tomato. They just blows them away and when you eat this food, I mean, I think the thing that's exciting is you can have a really positive relationship with food. You can love food. You can

dream of it. It can nourish you and satisfy you without taking you to this terrible place of self-loathing.

Robb Wolf: Right, right. It's just fascinating. We spent so much money on health care, but yet, we spend such relatively little amount on our food and there is a big cultural piece to that and then you have people who are kind of living on the margins with food was more expensive arguably that that might put the pinch on them as well.

I'm pretty interested in a lot of the I guess kind of political history behind this. Like in the 1970s, we went off the gold standard. We developed our first Fiat currency in a long time and then we really aggressively started subsidizing the production of food. Part of that, we had to figure out what to do with these vast quantities of food that we're producing and had to make them long shelf life and stable and this just happens to coincide with the development of liquid chromatography and different chemistry techniques where you could figure out what the flavors where in the foods and start sticking those flavors into processed foods that had a long shelf life and then we could make them real palatable too.

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Again, not anybody, there is no cabal of people trying to maliciously make all the stuff happen, but I think we had a lot of compliments of very unfortunate things when you look at our food supply now.

Mark Schatzker: Yeah and also, I think it took a while for people to notice that food was getting blander. It was always just sort of observations like a grandmother saying these strawberries don't taste the same as they used to and a lot of people just dismissed that. I talked to nutritionists who say oh, that's just their taste buds getting dull with age. They don't know what they're talking about. They do know what they're talking about.

Robb Wolf: Right, right, so interesting, wow. So Mark, what's new on the horizon for you? What are you cooking next and where can people track you down on the interwebs and *The Dorito Effect* is coming out on paperback soon as well.

Mark Schatzker: Yeah. The paperback is out on March 22nd so that's exciting. I'm doing some work for the Dr. Oz show to bring some of these insights to a broader audience and help people realize how I guess in some ways how scary the food story is, but also how exciting it is. That I think we really have to be positive and that there are delicious foods that are good for you and you're talking about your kids. I have kids. I think a lot about them. I think what we need to do part of what we need to do is retrain the palate, is get people to realize that like we're talking about foods like

tomatoes, grass-fed beef, heirloom chicken, this is where the real pleasure is. This is food that gives back and that's a long process. You can't just snap your fingers as we all know and tell someone you should eat this. It's like teaching them a different language and I think that's what we all need to focus on.

Robb Wolf: You know, what's interesting, we've so moralized the process of overeating, but I think that we've moralized it. Obesity and overeating is associated with this kind of weak moral behavior. I think it really flies in the face of what we know about Evolutionary Biology and we were actually wired to eat more, move less, but then putting in this nuance that you've fleshed out in *The Dorito Effect* where historically, we ate for nutrition, which meant flavors and these flavors were a communication of a nutrition and if that nutrition is lacking, then it kind of make sense that we would continue eating more and more because we're tying to get just the fundamentals of what we need.

So there are just so many layers to this, the economics, that kind of morality. In the US, the topic of evolution is a very hot topic in many locations, so it's hard to have a really descent contextual conversation around that. It's a fascinating story. I forget who it was, but a guy observed that you need to really fall in love with the problem and not the solution and I guess that's what I'm trying to do with all these.

Mark Schatzker: Yeah, but I think you're absolutely right with the moralizing part. Listen, we've got 50 years of data telling people eat this doesn't work. It works for a very small percentage, but I would liken food to more like music. If I wanted you Robb, let's say like a band that I like, I can't say listen to this band if you know what's good for you. I would have to figure it how to get you to like that. I think that's how we have to think with the palate.

Robb Wolf: Right, right, right. Oh I like that. I'm actually writing that down. Food is like music and there are all kinds of implications there. You never - my parents listened to country music my whole childhood and I like a little bit of Johnny Cash, a little bit of Willie Nelson, but the rest of the hound dogs and double wides don't really appeal to me a lot. They never is.

Mark Schatzker: You and I also agree on country music.

Robb Wolf: Perfect. Maybe we have both more refined food and music palates. Maybe that's the story with that.

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Mark Schatzker: You know that's actually not that crazy one idea. All I will say is that I kind of think the North American palate is a little bit immature in the

sense that there is a lot of adults walking around eating foods that are mainly for kids, like stuff crust pizza and chicken fingers and things. Like I said earlier, there is a reason kids like energy dense foods, but food on aesthetic level should sort of be a little bit more like, I don't want to say deeper arch, but it should explore themes that aren't just about simple and good. As people mature, they're beginning to like bitter foods, like a hoppy eel or like spicy food. You know kids don't' like spicy food, but as you grow up, so that's part of it. So it's not the analogy isn't that much of a stretch.

Robb Wolf: Right. You know it's funny. Between my 2 daughters, both of them really love this home-made sauerkraut that I make, but the youngest daughter, she and I will sit down and start eating super-hot kimchi together and she's a year and a half and she will crush prodigious amount of this stuff and my older daughter, she will have a little nibble of it and then she will start scraping her tongue to try to get the heat off of it and she wants nothing to do with it.

Mark Schatzker: Yeah. It's a nice thing. We're all built a little differently too and that's also important to realize.

Robb Wolf: Yeah. Mark, I loved your book, absolutely loved it, really tickled it. I can get you on the podcast. Where can people track you down on the interwebs?

Mark Schatzker: I'm at markschatzker.com. If you Google The Dorito Effect, you will find me. There is an email there. If anyone wants to reach out, I always love to connect with people.

Robb Wolf: Great. Well Mark, it was fantastic having you on the show and look forward to seeing you on Dr. Oz like folks really need to hear the story.

Mark Schatzker: Well, thanks so much for having me. It's been a great show.

Robb Wolf: Okay.

Mark Schatzker: I'd love to do it again sometime.

Robb Wolf: We'll talk to you soon.

Mark Schatzker: Okay.

Robb Wolf: Bye.

Mark Schatzker: Bye-bye.

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