

Our obsession with sugar, salt and fat

By Alexandra Sifferlin, TIME.com

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Did you

(TIME.com) -- In his new book, "Salt Sugar Fat," Pulitzer Prize winning investigative reporter Michael Moss takes readers on a tour of the \$1 trillion processed food industry, and the sights aren't pretty.

The average American eats 33 pounds of cheese and 70 pounds of sugar a year, and health experts say those trends triggered the obesity epidemic that has left millions at risk of heart disease, diabetes and other chronic health conditions.

Based on his interviews with top industry executives from Kraft to Coca-Cola as well as leading food scientists, Moss discusses how we became so dependent on processed food.

How does covering the food industry compare to your other investigative reporting projects?

In some ways the food companies are fortresses. They share so little of what they do with nosy reporters. At the same time, I kind of discovered that food companies are in some ways are like hotels. When you really start meeting the people inside who work [there], there are few precious secrets. People really do love to talk about their work.

I was also incredibly fortunate to come across thousands and thousands of pages of internal documents that shed huge light on the dark corners in the processed food industry and convinced some of the key executives to talk me.

It's pretty widely known that sugary cereals and Cheese Whiz are not good for you. What surprised you?

One of the things that really surprised me was how concerted and targeted the effort is by food companies to hit the magical formulation.

Take sugar for example. The optimum amount of sugar in a product became known as the "bliss point." Food inventors and scientists spend a huge amount of time formulating the perfect amount of sugar that will send us over the moon, and send products flying off the shelves. It is the process they've engineered that struck me as really stunning.



When it came to fat, it was the amazing role of what the industry calls the "mouth feel." That's the warm, gooey taste of cheese, or the bite into a crisp fried chicken that you get. It rushes right to the same pleasure centers of the brain that sugar does, but fat is carrying twice as many calories, so it is more problematic from an obesity standpoint. There is almost no limit to the bliss point in fat. If there is one, it's up in heavy cream some place.

Lustig: Calories are not created equal

So the companies discovered they



Are you eating the 'Salty Six'?



Comfort foods made healthy

could add as much fat as they wanted to products, and unless people looked closely at the nutrition facts, they are going to totally love it more than they would without the fat.

When it comes to salt, what was really staggering to me is that the industry itself is totally hooked on salt. It is this miracle ingredient that solves all of their problems. There is the flavor burst to the salt itself, but it also serves as a preservative so foods can stay on the shelves for months. It also masks a lot of the off-notes in flavors that are inherent to processed foods.

[TIME.com: Why are Americans still obese?](#)

After all your research, do you believe these foods can be considered "addictive?"

That is the one single word that the food industry hates: "addiction." They much prefer words like "crave-ability" and "allure." Some of the top scientists who are very knowledgeable about addiction in the country are very convinced that for some people, the most highly sugared, high fat foods are every bit as addictive as some narcotics.

Their advice to these people is don't try to eat just a couple Oreo cookies, because you are not going to be able to stop. Sugar uses the same neurological pathways as narcotic [products rely on] to hit the pleasure center of the brain that send out the signals: "eat more, eat more." That said, the food industry defends itself by saying true narcotic addiction has certain technical thresholds that you just don't find in food addiction. It's true, but in some ways getting unhooked on foods is harder than getting unhooked on narcotics, because you can't go cold turkey. You can't just stop eating.

The head of the National Institute on Drug Abuse in Washington says that it's more difficult for people to control their eating habits than narcotics. She is hugely empathic with overeaters.

In your book, you talk about how the industry fiddles with the physical shapes of ingredients like fat and salt so they taste better on the tongue. How are companies using this process?

Cargill, among other companies, make numerous versions of salt to meet the particular needs of their customers and their products. I had this vision of salt as chunks coming out of the ground and then thrown into a box.

But in fact, they're manipulated to work perfectly with every special product. There are powdered salts, chunked salts, salts shaped in different ways with various additives to work perfectly with processed foods. All of them are geared to increase allure.

My favorite is the one called the kosher salt. It looks like snow, but is shaped like a pyramid with flat sides that enable it to stick to food better. But where the magic comes in is that it's hollowed out so your saliva has more contact with the salt. Your saliva is what conveys the salt taste to the taste buds, which send the electric signals to your brain. The kosher salt also dissolves three times as fast as regular salt, so you're getting a much larger hit of what the companies call the flavor burst. I thought that was truly fascinating.

You focus heavily on the success of Lunchables to appeal to kids. What fascinated you about their creation?

Lunchables was an incredible stroke of marketing genius. Especially when they came up with the idea of making pizza Lunchables.

They asked mothers whether they thought their kids would eat this cold pizza that they assembled themselves, and the mothers said, "Are you kidding me? That sounds so awful." But when they turned to the kids and asked, "Hey, what do you guys think?" the kids said, "Yeah! That sounds really interesting."

They realized that the overwhelming attraction to the Lunchables wasn't the taste. It's the empowerment. It's about letting kids have control and manipulate what they're eating. They came up with this brilliant Lunchable slogan which was, "All day you have to do what they say, but lunch time is all yours." That resonated deeply with children and sales just went through the roof.

The darker side of Lunchables is that it brought fast food into the grocery store, which has become a real concern given the obesity crisis.

The CDC put out a recent report saying consumption of fast food has declined from 13% of our calories to 11%. There is some reason to believe that it was due to the recession, because people were trying to cut back on going out to eat. The question is what are they substituting for that fast food?

If you look at grocery stores in the last decade or more, there's been an increase in foods that try and emulate fast foods. It's like the industry has moved into the grocery store.

[TIME.com: Cutting soda curbs children's weight gain](#)

Were you surprised by how many scientists and food company executives avoid their own products?

It was everything from a former top scientist at Kraft saying he used to maintain his weight by jogging, and then he blew out his knee and couldn't exercise, his solution was to avoid sugar and all caloric drinks, including all the Kool-Aid and sugary drinks that Kraft makes.

It ranged from him to the former top scientist at Frito Lay. I spent days at his house going over documents relating to his efforts at Frito Lay to push the company to cut back on salt. He served me plain, cooked oatmeal and raw asparagus for lunch. We toured his kitchen, and he did not have one single processed food product in his cupboards or refrigerator.

The scientists and executives were pretty honest about their roles in creating unhealthy food. Did you get the impression they felt guilty about their products?

One reason they don't eat their own products, is that they know better. They know about the addictive properties of sugar, salt and fat.

As insiders, they know too much. I think a lot of them have come to feel badly. But not blaming themselves necessarily, because the older ones invented a number of these products back in the days when dependency on them was much lower. In the 70s and the 80s for example, we were eating more home cooked meals from scratch and eating more mindfully. As society evolved and we became more dependent on these conveniences, these people came to see their work with real misgivings.

The inventor of the Lunchables, Bob Drane, wishes mightily that the nutritional aspects of that product could've been made better. He is still hoping it will be made better. They came to have regrets about their work in the

context of the health effects their products seem to have that go hand-in-hand with society's increasing demand of their products.

You highlight some examples of companies trying to make their food healthier. Are there any changes you find particularly positive?

I was really struck by the concerted effort by Kraft to embrace an anti-obesity initiative. At first they tried to rally the whole industry to collectively cut back and try to fight obesity, including down-formulating the amount of salt, sugar and fats they were using.

But when that failed, and the rest of the companies refused to join, Kraft set off on its own. It cut back on its marketing of sugary products to children and rejiggered its packaging so it would tell people how much salt, sugar and fat in calories were in each package, not just in a tiny little serving.

The most revolutionary thing was that they ordered their food scientists to limit the salt, sugar and fat in their products. This was a company where every ounce of their effort for decades and decades had gone into making products as hugely appealing and addictive as possible. Mind you, these are not companies that want people to get fat or unhealthy, that's not in their business interests, but they do want people to buy as much of their products as they possibly can.

To have Kraft then say to itself, "Wait a minute, maybe there's some other competing interest to pay attention to" was mind blowing. Ultimately, they ran into the problem that the whole industry faces, which is the huge pressure from Wall Street and the investment community to increase profits.

[TIME.com: The 31 healthiest foods of all time](#)

What do you think is the greatest obstacle standing in the way of federal regulation of salt, sugar and fat?

I think the USDA is badly conflicted. It has multiple missions, and one of the biggest is to support the agricultural industry. This plays out most significantly in the area of cheese and beef. The USDA has become a partner with the dairy industry and the beef industry in promoting increased consumption of cheese and red meat at a time when its own nutritionists are encouraging people to cut back because both are heavily laden with saturated fat, which is linked to heart disease.

This largely explains why cheese consumption has tripled in this country since the 70s to as much as 33 pounds per person per year. On the flipside, the USDA has this tiny little operation that creates things like the food pyramid and dietary guidelines to encourage people to limit their consumption of saturated fat, but the budget for those efforts is miniscule compared to budget for promoting consumption.

One of the key things for moving forward is that the playing field needs to be leveled in terms of pricing. We all know we should be eating more fresh vegetables and fresh fruits. When you hit that part of the store and you see that blueberries cost \$5 for a little basket and you can wheel over to the center of the store and see all these power bars and seemingly healthy things that are in fact loaded with salt, sugar and fat and they are half the price or a third the price, and there are all these other things that can fill up your cart for much less money.

That's a really difficult thing for families to deal with. Everyone is convinced that the government subsidies that support processed food need to be shifted over in some way to fresh fruits and vegetables or it's going to continue to be hard for even people who want to eat better to do so financially.

Do you think there's any change in sight?

I think we are at a real tipping point here. What I hear from people inside the food industry is that the food giants are scared to death right now. The pressure from Wall Street on profits has never been greater. The pressure from consumers for better, healthier products has never been greater. The pressure from the White House to do something to fight obesity is increasing.

The other problem they're having is that they've cut way back on the pure science and research that they used to do, and so many of the scientists I've talked to are pleading with these companies to start putting more money into inventing new products that both taste good and are healthy. I think that will be key to getting out of this mess we are in.

Have any of your eating and purchasing habits changed since writing this?

I have two boys age 8 and 13 and it certainly makes things difficult.

My wife, like so many people, works outside the home like I do and our mornings are totally crazy. That said, we've been working on breakfast. We get the boys to eat 100% whole wheat toast and they really don't notice the difference between white bread and wheat. We arbitrarily set a limit on cereals of 5g of sugar per serving, which they find kind of fun because they can go into the cereal aisles and hunt for cereals that have that much sugar or less.

They may have to reach low or reach high to find them, because they're not at eye level, but basic Cheerios have one gram per serving which is fantastic and they love it. If you engage kids in the process of getting healthier, they rise to the occasion. They are smart and they're eager.

[TIME.com: Make over your diet in one week](#)

Do you have any advice for people going into the grocery store who want to eat healthier?

Make a list and stick to it.

Some of the plotting done by grocery stores and food manufacturers is to get you into situations where you are making spontaneous decisions. That's when the soda and the sugary foods around the check-counter get sold most heavily. Spend more time on the ends of the supermarket near the fresh vegetable and fresh fruit aisle, and look for things that are affordable.

When you get into the center aisle, be careful in the middle part because that's the highest selling area, and where they put the most heavily laden salt and sugary products.

Also, look first at the front of the packaging. That's where they hit you with things like "low fat" and "low sugar" and "added calcium" and vitamin this and vitamin that. Take those as warning signs. When they say low fat, it's often loaded with sugar to make up for the reduction in fat. Or likewise, low salt is often loaded with sugar and fat to make up for the low salt. When they splash the phrase, "added calcium" on the front, that's often a signal that the thing is loaded in all three of the pillars.

Lastly, spend some time with the nutrition facts box. It has to be on every package now. It can be really revealing as to what exactly is in the package.

Pay attention to the number of servings per container, because the companies know that people will typically eat a package of cookies that has three servings in it, all at once. You have to do the math yourself, because they will list the nutrient content based on one serving, which will dramatically understate the amount of nutrient load you're getting by eating the package.

Very few of us can avoid processed foods all together. Our lives will not allow it. I'm certainly in that category. But ultimately we are the ones who decide what to buy, what to eat and how much to eat, and that's a very powerful thing when we walk into the grocery store.

I hope the book can help people to understand everything the food giants are throwing at you in terms of formulating, marketing and advertising. I think you come away feeling more empowered to take control of that decision-making process yourself.

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[Salt Sugar Fat: Q&A With Author Michael Moss](#)

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