
# Transcript

Danny Lennon: A big welcome to the podcast to Dr. Gyorgy Scrinis. Thank you so much for joining me.

Gyorgy Scrinis: Thank you, Danny. I really appreciate the invitation to come on. I'm an avid listener of your podcast, so it is a pleasure to be here.

Danny Lennon: Before I get into any of the interesting topics that I'd love to walk through, maybe to give people listening some context to your background, can you maybe walk us through some of that and then afterwards we'll maybe talk about how that links to some of our topic today?

Gyorgy Scrinis: Yeah, sure. It's important to put up front; I'm not a nutrition scientist. I don't have any scientific expertise in the area of nutrition or food science for that matter. As many of your guests do. My own background… I'm a social scientist essentially. I have done a science degree as well, but really social theory and political theory is  a lot of my academic work. And my student work has been in that field, combined with what we now call 'science and technology studies.' But essentially it's philosophy and sociology of science and technology. My PhD, for example, is very much in the philosophy of technology. So it's a combination of those disciplinary fields, but I've

always applied those disciplines to the study of food, because food's been my passion since the 1980s.

And so I really have been studying all aspects of the food system, but bringing that kind of lens to it, and with a particular focus on the science and technology, of food production. And that includes agricultural production, and then further up the supply chain, looking at nutrition science, and now also food processing and food science.

Danny Lennon: Brilliant. And so applying that philosophical and social science lens to this area of food and nutrition brings about some really interesting talking points. And I think one of your areas of influential work has been around this concept of “nutritionism”, or people may have heard others use the term ‘nutritional reductionism’ to explain the same concept.

And so whilst a number of listeners may have heard this come up a number of times before, for people who are maybe not familiar with it, can you maybe explain the concept of nutritionism?

Gyorgy Scrinis: So, I use the term nutritionism, and I use it this “-ism” word because it very much, I see nutritionism as both an ideology and a paradigm. And I use “ideology” in the sense of a political and social ideology, but also in the sense of a scientific paradigm. And I can explain what I mean by those. Nutritionism kind of is short for nutritional reductionism. And so simply it means the reduction of our understanding of food to its nutrient content.

That's a very simple definition but there's a bit more nuance to it than that. In a sense, I distinguish different aspects of different and different types of reductionism. So I mean, I guess my starting point is to make that distinction between the nutrient level, the food level, and the dietary pattern level.

And so in the first instance, nutritional reduction means reducing all of our understanding of food and also of dietary patterns down to the level of nutrients. Where we're just talking nutrients. Now it's important to highlight the fact that nutrition scientists have been studying nutrients. And that humans are interested in studying the role of nutrients; that is *not* reductionism in the way I use the term reductionism.

That's simply understanding food and studying food at the level of nutrients. The pejorative of term ‘reductionism’ is when we almost exclusively think we're going to find the truth about food at the level of nutrients, at the expense of actually understanding at the level of foods, and at the level of dietary patterns.

So it's really important to make that clear and because others use the term reductionism in other ways. They say: “well, any kind of study of food level nutrients is a form of reductionism”. And then they go to say: “oh, well, but reductionism is a necessary evil”, if you like, or “a necessary step in the scientific process.”

Okay, so that's not how I'm using reductionism. I think the study of nutrients is a perfectly valuable enterprise, but it's that reduction of food to nutrients. Another further form of reductionism is where even within that nutrient level, there's a further reductive focus on single nutrients and the role of single nutrients, and assumptions made about the role of single nutrients in terms of their impacts on the body and on health.

I refer to also as ‘single nutrient reductionism’. Now as it happens, a lot of nutritional reductionism does take the form of single nutrient reductionism because it's so hard to study nutrients, even in isolation, let alone to study the multiple interactions of nutrients. And we're still sort of just scratching the surface of that. So it's important to make those kind of distinctions about different types of reductionism.

Danny Lennon: Yeah, so maybe to speak to that a bit more, because this becomes really interesting, particularly for people who have heard maybe us on this podcast talk before about this reductionism in the form of an over-focus on single nutrients and the pitfalls of that within nutritional science.

But your critiques also extend beyond that to something that is… I find very intriguing because we've talked about this… Okay, there's a pitfall in this single nutrient focus, and what we really need to do is look at the dietary pattern level. But some of your critique also includes that to some degree nutrition, science.

This point, the way it's viewed things at the dietary pattern level has also been reductive. Could you maybe just speak to that a bit more?

Gyorgy Scrinis: Yeah, I will. Before I do that, I'll just further nuance about the definition of even nutritional reductionism, and that is, I also define it as not just the reductive focus on nutrients, but also the reductive interpretation of nutrients.

So it's not just the fact that scientists might study the role of fat. But then interpret the role of fat in a very reductive way. So it's about the, it's about how that knowledge is immobilized and interpreted and perhaps also translated into dietary guidelines or food engineering and so on.

So it's the interpretation as much as just that focus on nutrients but this, as you say there, this reductive both focus and also interpretation doesn't just happen at the nutrient level, even though that's been the dominant focus in nutrition science, I think it also happens at the food and dietary pattern level.

And example of that might be, well, okay, even if we're studying the role of a single food, could be an apple or could be a soft drink, the tendency to sort of make quite definitive statements about the very precise nature of the impact of that food on the body, perhaps at a molecular level is perhaps also has a number of those reductive characteristics.

I list a whole range of characteristics of reductionism and they include sort of simplification of knowledge, exaggeration of the role of nutrients or foods as a number of others as well. And so at the food level another example might be the the super food phenomenon.

The idea that there's this food, which could be goji berries or broccoli are considered a super food. Again, we interpreting in a way that because of its components, its fantastic effects on health. Which tends to exaggerate perhaps the role of that food in an overall dietary pattern and its health impacts.

And we see it at the dietary pattern level where we latch onto particular dietary patents. And the Mediterranean diet is a classic example of that. I want to glorify that diet as being the epitome of what a healthful diet is, assuming we can define it as one thing. Anyway, there's all sorts of problems there.

So once again, it's that, that reductive interpretation, the tendency towards very claimed precision of our knowledge and tendency towards really either simplified and exaggerated claims about those foods and dietary patterns. We'll go and talk, talk later about ultra-processed foods, but we're seeing that also with ultra-processed foods as well, that we wanted wanting to explain the health impacts of ultra-processed foods and maybe the detrimental impacts, but once again, wanting to make quite definitive claims even for not talking about the nutrients. We're talking about other characteristics of the food. So there is those dangers I think of reductionism at all those levels.

Danny Lennon: So let's speak to that point in relation to ultra-processed foods, because this has both been an interest of yours to look at, and there's also quite a hot topic in nutrition science right now as well, and you've spoken a bit to it there. But I'd love you to expand on this idea of how this interest in the philosophy around food and nutrition science connects to your current interest in ultra-processed foods.

Gyorgy Scrinis: Yeah, thanks. And there is a very direct connection there between nutritionism and ultra-processed foods. In my work, I mean, what, what started me off, sort of developing the critique of nutritionism, really, it's going back to the eighties and nineties now, although I never sort of fully articulated the framework until the early 2000s, what kicked it off was the concern that this focus on nutrients was leading to some quite distorted and strange dietary advice.

An example of that, which I talk about at length in my Nutritionism book, is the celebration of margarine as a healthful food. This highly processed food, was being celebrated as a more healthful product than butter based on the nutrient profile. And that was because of this reductive focus and interpretation of nutrients, this focus on nutrients.

One of the things it's done, it’s led nutrition scientists to not study, not be too concerned about studying food processing per se, because there's always been this assumption that you could just read off the nutrient profile of the food and that would give you to tell you, in sense that it's healthfulness or not.

So one thing, it's that nutrient focus has done, has, has prevented that sort of development of, and that focus of study on food processing. I mean, how else do we explain the fact that it's not until the last 20 years we've seriously stayed, started studying food processing. And even this Nova classification is only 10 years old.

So that's really why I got interested in this issue and what led me to pursue a critique of nutrition science per se. So one thing I saw was an absolute lack of any kind of, sort of more systematic study one food processing and a lack of any sort of categories or categorization of food of processed foods.

So this is going back 20 years and that's why I actually developed my own classification system for processed foods, which went into that nutritionism book. I won't go into the detail of that, but that had three categories of foods, three levels of processing, if you like, from minimally processed to highly processed foods.

My highly processed food category was, was actually called processed reconstituted foods. So I was referring to the reconstituted foods. And it's actually a very similar definition to the ultra process food category. So I saw a need for that and I didn't see a nutrition scientist doing that works, and therefore I developed that framework.

And then as it happened in the meantime, in parallel Carlos Monteiro and his team at the University of Sao Paulo in Brazil were also developing a classification system, which is now known as Nova. And it's been very successful in all sorts of ways and been embraced by, by research teams all over the world, including myself now as well.

Because I much prefer classification system, and we can talk about the unique characteristics of that classification system. But certainly the starting point, I think even for Nova, is that we have to go beyond just talking about the nutrient profile of foods.

It isn't to say that the nutrient profile understanding isn't useful and isn't perhaps a factor here, but it's not enough. And it's not enough for a number of reasons. Not because, I mean, part of the reason is just our limited knowledge of nutrition science. Our knowledge is necessarily limited and we

should always be looking for other ways of understanding food and integrating various forms of knowledge of food.

And this is, once again, this is my critique of reductionism. The way we'd, we had rejected other ways of knowing food, including traditional knowledge, traditional cultural knowledge. It's embedded in dietary patterns and cuisines from all around the world, that form of traditional knowledge has been rejected in a sense when we privilege the sort of nutrition science knowledge.

But there are other forms of knowledge too. The knowledge of our senses, for example. But the one I particularly wanted to focus on was the knowledge of what, how, what processing does to foods, which would study very little at that point.

Danny Lennon: Yeah, and I think that highlights a number of really important considerations that maybe people haven't thought too deeply about, if they haven't came across some of the history of this development before, of something as simple as thinking about degree of processing of food maybe taken for granted nowadays.

But as you said, within the last decade or two, this is the first time where we've actually had proper classifications. And even now we're still at a point where there is still debate about those classifications as we'll probably get to, but it’s looking at this degree of processing and I suppose one of the most extreme examples that could speak to this point that you make is if we could chart out all the essential micronutrients and macronutrients someone may need that indicates that their diet is “healthy”, but just put that into a processed shake as actually probably some start-up companies have of likely to do, and say, “if we just gave people just this formulated shake that has all these nutrients that would empower all the health benefits that one gets from diet”, that seems to be a pretty large jump. And actually you would probably suspect, based on most evidence, it doesn't play out that way. And so this speaks these other elements around how we consume diet in its totality.

So maybe just to go into that a bit around the classification of processed foods and particularly ultra-processed foods and the where this term indeed has come from for people who are unaware of that kind of history. Can you

speak to again, the importance of actually having some of these classifications in place, particularly now that we have Nova, which as you said, is probably at this current time, the most well accepted.

Gyorgy Scrinis: If we don't have a classification system, of course, then we can't begin to do the studies. We can't begin to quantify and study the impacts nor communicate that amongst scientists or with, with the wider community.

So having, and all we've had is terms like highly processed or junk foods, but these are not precise categories in any sense and precise. And that lack of any kind of precision has been the problem. And that wobbliness has always suited the food industry really well to have that blurriness and, of around the sort of definitions.

So it's really important now that we have the classification to be able to do those studies. And I think even though there's, there's some, I think there's quite a bit of confusion around the classification system itself, and there's claims around lack of precision, actually, I think it's a very precise framework.

But what's really interesting about, and we can go into the categories if you like, but the Nova classification is a thoroughly unique. I think quite brilliant way of conceiving of foods, different types of foods according to levels of processing. And the reason I say that is because it's, I don't think it’s, people tend to see it as a purely technical classification that it's making technical distinctions between foods based on levels of processing or composition or, or whatever.

But it's much more than that. Much, much more than that. In fact, the classification system that I came up with my book with three levels of classification, that was in a sense, a more purely technical class classification. But Nova has another dimension to it, which makes it thoroughly unique because it has this social dimension to the classification.

And by that I mean because the definition of ultra-processed foods. But also each of the categories is not just based on the level of processing and the type of processing, but also the purpose of processing and this notion of purpose. It really is worth unpacking because it actually. You go, you won't truly appreciate the four categories and let you understand what the purpose

of each of those categories is and what it's telling us about, about how the food's produced, why it's produced, and even who has produced the food.

These are all embedded in the definition of each of the categories of alter processing, and that's what I think it's such a gift, this classification system and the fact that it's, it was a, in a sense, a nutrition scientist, a public health scientist, in Carlos Monteiro and his colleagues that have come up with this really, really clever classification system.

And as long as we keep trying to treat it as a, just a technical classification system, I think we're missing the point and we're missing a whole other dimension, which, which connect really connects up the dots between not just the composition of foods and the, but also the socioeconomic dynamics around the production, distribution and consumption of ultra-processed foods.

Danny Lennon: Yeah, let's stick into that because that really is fascinating because I think colloquially, when people maybe hear the term ultra-processed foods thrown around, they think, oh, well that just means high fat, high sugar foods. But, but really from what we've said, the commonality of certain nutrients is not really that defining of the characteristic at all.

And in fact, that doesn't tell us where something could be placed in which category. And there's these other elements, one of which is the degree of processing. But this element you've also talked about is the purpose of that, which will tie in a number of topics I want to get back to later. So maybe as an ex example, could you maybe walk us through that, and particularly for ultra-processed foods, how we would define.

When we think about like the purpose of that and compare that to something like something that also has a degree of processing but is more minimally processed as an example, and just as a way to contrast those for people so we can make it quite clear.

Gyorgy Scrinis: So, I mean, let's just get to the definition. The more technical definition is that it's a formulation of food components. These are foods not made from whole foods of any kind, but they're made from reconstituted components of foods. Which are then tend to be then more highly processed.

They tend to have actually high levels of sugar, salt, and fat and so on. Those ingredients, that nutrient profile… but they're not defined by that, and we'll get back to that. But nevertheless, they tend to have that, they also tend to have lots of additives, the flavorings and so on. But the key part there is it's is made up from, for those deconstructed food components.

They're not really made from foods at all, which is how you might cook in your kitchen. You start off with some, with some various foods and you know, maybe the flour's been refined a bit, but otherwise you've got some vegetables there and some meat and you start cutting them up. And so we're already getting into who's doing the cooking here, but when the food industry and ultra processed food producers come to the, to their kitchens, they're really not dealing with foods at all.

They're dealing with component parts of foods and food ingredients that have been not just refined, but actually ultra processed in various ways, broken down chemically and biologically transformed, and so on. So this is key. Then they'll of course, add lots of sugar and salt and vegetable oils and so on.

Maybe some animal fats as well, but also flavoring agents. Now, what this definition is telling us, it's not just that necessarily all of those components are considered to be non-health or damaging to your health, but it's a question. This is where the purpose comes in: Why are these foods being produced with these ingredients?

And in the definition of ultra-processed foods is it's because they're, it's in order to make foods that are often hyper-palatable, very convenient and durable, and highly profitable for the companies producing them. Now you might think: "well, what's that got to do with the composition of the food?" And actually it has everything to do with it because it actually explains to us why those ingredients are in there. Because in order to make these foods which are both cheap and hyper palatable and very durable and highly profitable, they need to be made from those components. They need to be made from a handful of commodity crops that have been broken down to their component parts.

They then need to, once they've been processed in that way, they've lost all, any kind of flavor or any fruitiness has been sort of lost in that process. And

any kind of texture, taste, that has to be brought back in through the addition of those other ingredients. And then of course, the additives etc. in particular are an absolute must because these foods would taste terrible without them.

So that really explains to us so much I think about what's going on here about the why's is as important as the, as the what is in these foods. And what it tells us here is that the starting point of the producers of these products is not that, hey, we're going to make a really great food, is that they're not really trying to make food at all.

They're trying to make a product which is going to sell lots and make them lots of profits. And that's important. So they're not setting out, as you might in your kitchen to make it a tasteful food and which could be more or less healthful depending on the ingredients. But it's going to be okay. We think and particularly if you are, if your guide when you're cooking is some sort of traditional cuisine where people have worked out what works well as a meal, as a dietary pattern, what works well together, that's not the starting point for these companies.So hopefully that gives you a sense of where that purpose actually comes into that definition.

Danny Lennon: That raises this point that in relation to ultra-processed foods, that the, let's say the problematic nature of them, for lack of a better term, is more than just their nutrient profile. It's a number of things that we've outlined in relation to the degree of processing. And we can talk about later maybe why that's the case. But it's also that they replace other foods that would otherwise be in the diets. The replacement aspect is important. One of the things that comes through in some of the publications that you have on this topic is there's multiple layers, which we need to look at this.

First of all, you've noted that there's the nutrient layer, the food layer, and the dietary pattern layer, but then beyond that, dietary reconstitution, dietary imbalances. Can you maybe just speak to that a bit more?

Gyorgy Scrinis: Yeah, sure. And yes, Carlos Monteiro and I published a paper just this year on in Nature Food on this, trying to unpick some of these so-called mechanisms where we might explain the health impacts of ultra-processed foods.

So, just to step back a bit, now that we have all these kind of epidemiological evidence linking high levels of consumption of ultra-processed foods with detrimental health impacts a whole range of detrimental health impacts, particularly around chronic diseases. Sort of now this level of interest and sort of many scientists are asking that question, well how do we explain this association?

And it is really an attempt to sort of, in a sense, narrow down what is a very specific nutritional or biological mechanisms that might explain the impacts, the health impacts of these foods. And look, I certainly welcome all of this kind of new level of interest and the, and the new research that's going on.

And we're starting to build up a bit of a picture about the multiple mechanisms, but also, and be concerned that there's a renewed level of reductionism here at the, a sort of molecular level where we think we can actually identify the very precise mechanisms. Two or three or four mechanisms which might explain the sort of dietary and health impacts of these foods.

And I think that's the wrong move because of the way these foods are produced and who is producing them, they have multiple mechanisms, and working at various levels that you mentioned, the nutrient, the food, and the dietary pattern level. And we can't necessarily reduce it to any one of those.

It's multiple levels and all, all ultra-processed foods are contributing to those multiple mechanisms. So some of them are… we can certainly start at that nutrient. You know, and talk about the high sugar, salt and fat content or whatever it might be. And that's the cliché of course: sugar, salt, fat. But we could also look at other sort of molecular level components of food.

So that's what I call it, the ‘nutri-chemical level’. Also, not just the nutrient level. We might think of other components in food which might be contributing to the health impacts, whether it's spiking your blood sugar levels or you know, whatever it might be affecting your microbiome. We can always come up with a whole range of explanations at that nutri-chemical level.

But then there's the food level, and here we can talk about, well, the types of foods they are. So even course it's ultra-processed food category is a very

broad category of range of foods there. But what's the nature of those is a lot of those foods tend to be poorer quality foods inherently.

So we're talking here, confectionary and snack foods and soft drinks and so on. So there's a certain bias towards those sorts of foods. And then all the processing techniques that we've been been touching on here, the ultra processing techniques there in sense also working at the level of the food level and the way the foods and also the various ingredients might be being processed.

And simply the imbalances, the severe imbalances of those ingredients are very high levels of vegetable oils or sugar or salt. So just those kind of, but I'll call those food level imbalances. Right. I haven't mentioned there the notion of artificial as well. And by the way, Anthony Fardet has written (and) he speaks of the “artificialization of foods”, refering to artificialization at the nutrient level.

And that is, for example, the production of synthetic nutrients is I think a form of artificialization. At the food level synthetic ingredients like artificial sweeteners is an example of that. And then at the dietary pattern level, we're seeing similar dynamics going on. So imbalances at the dietary pattern level.

So where the various food groups, are favored over others. The way these foods tend to sort of skew our dietary patterns in that way could be what we're eating, what the frequency in which, which we're eating. So higher levels of snacking, for example. And often those snack foods, of course, themselves might be of poor quality.

But the other one really important one, which you mentioned was the displacement effect. The displacement of minimally processed foods from our diet is a dietary pattern effect, which is huge because whatever you might think of ultra-processed foods, I mean that might be, and once again, we have to acknowledge that there are a broad range of foods and some might be poorer quality than others. And some of them might be okay, but what they're all doing is displacing the perhaps more nutritious and certainly less processed minimally processed foods in our diets. And that could be as significant a health impact as what, as the sort of more detrimental impact of the foods themselves.

Even if all ultra-processed foods were in a sense neutral to our health, if they're displacing those foods, that's really that's a really big impact. We have to contextualize this socioeconomically and geographically in terms of whose, whose diets are being replaced and when it's people who are on perhaps low incomes or in regions of the world where they're already eating a really narrow diet, it might be minimally processed, but it's a really narrow diet in terms of… because they can't afford a diverse range of foods. Perhaps can't afford much too much meat, for example. When those people's diets are already quite limited and then minimally their foods are being displaced by these ultra-processed foods. I think the health impacts can be really, devastating. You know, perhaps less, more protected if you, if you otherwise eating a good quality diet the rest of your diet. But when you're not, I think, and that's why the socioeconomic lens is really.

Danny Lennon: There's a number of really useful points that you bring up there that I'd love to dig into more and one centers around when we're thinking about how to have rational conversation about this topic of making sure we keep a focus on a big picture to some degree.

So in that sense, I mean that sure. We can, as you say, point to specific foods that may be better or worse than others despite their categorization. And just like as an example, someone could say, well, we have foods like a tofu product or a mycoprotein that might be better for someone to add in place of a fatty kind of meat if their goal is to reduce LDL-cholesterol just as one example.

But rather than thinking of that as something that goes against this overall point, I think what you're alluding to is that the real question right now before we look at specific mechanisms of different foods, In general, does a high proportion of one's diet when it's made up of ultra-processed foodslead to negative health outcomes?

And if so, then how do we shift at a population level, more of the diet towards being more minimally processed as opposed to ultra-processed? And that's the kind of big picture goal and the other little details, sure we can fill in at the same time, but the keeping the focus on on that big picture is important.

Gyorgy Scrinis: Yeah, absolutely. So going back to that distinction between the three levels, the nutrient level, the food level, and the dire pattern level.

So it's great. We've seemed to have gotten away from that nutrient level and this and this Nova classification seems to be differentiating foods at the food level because it's telling us about the levels of processing of the food and it very much is doing that.

But there's a danger in just seeing it as a food level categorization and that it's a way of distinguishing just good and bad foods, for example, or, and it's, it certainly helps us to make those distinctions between levels of processing. But that's not the be all end all. And so, of course, as you mentioned, there's going to, there's a huge range of foods within that, and you might for other purposes, wanna make those distinctions.

But the purpose of NOVA is not to make those fine grain distinctions between different types of ultra-processed foods. It's pointing to this category of foods, which has some general common characteristics, but it's also playing a bigger role in the food system, in our dietary patterns in who's producing the food, and a whole lot of other impacts as well.

So the point I wanna make here is that we need to be thinking of the Nova classification as not. A food level classification, but as a dietary pattern level classification. Cause really it is helping us to think about dietary patterns in a different way. And certainly what the studies are telling us is that now we eat, we are having, we have these ultra processed dietary patterns, which are dominated by ultra-processed foods.

If you think, if you go back to think about the four categories and how they're defined, they're actually telling us something about a dietary pattern because that fourth category of ultra-processed foods, who's producing the food, what's the food industry? But the other three categories are foods produced, can be produced in the home, for example, or by, by this produced in restaurants.

So it's telling us something about who's doing the cooking, so and where the cooking's being done. So it's telling us about how the foods are being used and how they fit into a dietary pattern. And if I could just touch on the second category two of Nova; I think it's the most interesting category of all. It's called “processed culinary ingredients”. So these foods include sugar, vegetable oils, butter and animal fats, and salt. And these are ingredients

that we use when we cook. You know, we use vegetable oil to fry some vegetables, or use sugar to make a cake, whatever it might be.

It is a fascinating category. It's framed within Nova as these are useful ingredients when you're doing your own cooking. Now, of course, if you think about how mainstream dietary guidelines and nutrition science looks upon these ingredients, they'll say: “oh, these are potentially harmful ingredients. You should minimize your consumption of these, or cut them out altogether.” Because the nutrient profile of them is they're high in sugars and high in fat and so on. Of course, you shouldn't over consume, overuse them, but you, you tend not to when you're sensible when you're in the kitchen cooking.

So this category actually serves as a marker of a good quality diet. Whereas, of course, when the food industry gets their hands on those ingredients, that's a whole other story. Of course, they're going to fill their foods… ultra processed foods are full of vegetable oils, and sugars and salt and so on. So it really, the classification is really telling us something about diet, our dietary patterns and how they're constructed. Ultra-processed foods is a dietary patent concept as much as it is a food level concept, as you say.

Danny Lennon: I think oftentimes it does get confused with simply being at the level of food and another way to categorize an individual food as good or bad per se. Whereas if we’re thinking about, in general, what is the proportion of one's diet that's made up from this group of foods versus this, and that might tell us something about the healthfulness.

And speaking to that point that you made about the use of a certain, nutrient or a certain ingredient, let's say, in cooking versus in products, I think sodium is a really good example here and something people may have heard us mention on the podcast before of indeed a lot of people in the general population have a sodium intake that is too high that can cause various negative health outcomes.

But when you look at where that comes from, I think at least based on UK data, like 75% of that is from, processed foods. And maybe the closer to like 10-12% is from actual in-the-home use, salting meals or adding it during cooking. And so if someone was having a very low intake of those ultra-processed foods that would remove most of the sodium and then probably that leaves room for using at home. So I think that serves as an example to

exactly what you say. Let's maybe talk a bit about the need for public health policy in this area. As you've noted, this affects different populations differently, and certainly subgroups within that population, but at least on some of the populations that have been studied and trying to get a handle of how big an issue this.

What do we know about the prevalence of ultra-processed food consumption? The percentage of diets are being made up by these, and then maybe we can talk about how that differs between certain groups.

Gyorgy Scrinis: I mean, we have this, this concept of the nutrition transition coined by Barry Popkin, which talks about very broad shift throughout the 20th century to more highly processed foods, but also meat-centered diets.

It's important to note the sort of differences, how that might play out. That and the different stages even that that transition sort of goes through. So, yeah, we, we know in, it tends to be in the high income countries particularly the United States, the UK and Australia, which have the high, actually the highest ultra processed food consumption. I should say and Canada. We know on average over 55% of the diet in the UK, I think, and 56% in the USA is ultra processed. So over half the diet. What that means is the food industry. And here I'm talking about large food corporations, not small food companies or restaurants. They're producing most of our food on average.

So that's significant itself and perhaps scary enough in itself. If we think about the profile of these foods, what's more shocking though that our studies have shown is when you break it down to the highest and lowest consumers of ultra-processed foods within those countries. So we've done those studies in Australia and all these in these other countries.

So the ones I've been involved in Australia… The Australian studies, by the way, were led by Priscilla Machado. And what they showed was: okay, the Australian diet on average is 42% ultra-processed, the lowest consumers of ultra-processed foods within their population. And that is the bottom, say, 20% of ultra-processed foods consumers.

And by the way, I probably put myself in this category on average, I think it was something like 17% of the diet was ultra processed, which I think is still a significant amount actually. But the highest consumers were 70% and over of

ultra-processed foods. We're talking about a huge, some people almost their entire diets.

Now we can think about, talk about why that's the case, who, who these people are, the sort of socioeconomic profile. One thing we do know, unfortunately tends to be, adolescents and young adults who are some of the highest consumers in terms of age groups of ultra processed food. So that's a sort of shocking statistic as well.

Now that's what's played out in high income countries. And I should say there are some high income countries where the like France for example, the consumption is lower. Different sort of dynamics there, different sort of food cultures. But theirs is also edging up. I think theirs is around 27% from memory, and rising.

But the dynamics sort of play out quite differently in the sort of lower middle income countries where the consumptions is coming from a much lower base rising quickly. And what we do see, we know because ultra processed foods aren't necessarily cheap in those countries, so that it tends to be people on perhaps middle class incomes who might be the first consumers of these foods able to purchase them.

And that's how they sort of gain a foothold in a country. But they then quickly spread to the, to the rest of the population. So that might have been the case in Australia, for example, in the UK, that it was people on higher incomes who could afford to buy some of these processed packaged foods.

But as that sort of market matures, it then starts to shift where people on higher incomes actually can afford and have the time and so on to get access to minimally processed foods, to cook at home or eat at nice restaurants and so on. And it tends to be people on lower incomes who are buy, buying a lot of the ultra-processed foods because they're cheap.

And also they're probably buying the poorer quality ones as well for that, for that reason. So that it, the dynamics are playing out differently in different parts of the world and different stages of that kind of transition, if you like. But they are, I think, worrying numbers.

Danny Lennon: One of the things I'm keen to ask you about is when we look at potential policies or interventions to improve population health, one of the areas for potential regulation or policy has been around reformulation of certain products.

And again, this will probably speak to looking at certain nutrients, let's say if we have certain, regulations on industry where they then end up having to reformulate products to be lower in sodium, lower in saturated fat, as an example, and we can there for kind of model out. Okay. Based on the typical use of these products and what this might do to nutrient intakes in the population generally.

And if. Average sodium intake comes down by this much, it's going to have this knock on benefit for health. However, that would seem to be having at least some conflict with some of the ideas you've presented here about, again, focusing in on a nutrient and focusing on reformulating processed products already as opposed to shifting people to more minimally processed or whole foods. Now for people talking about reformulation, their point may be, well, look, people are going to continue to consume these types of products. So if we can get some degree of reformulation and there's less sugar and sodium and saturated fat, that's likely have a population level, public health benefit. How do you see that conversation around reformulation?

Gyorgy Scrinis: Look, I think reformulation is a flawed strategy for a number of reasons. Seriously flawed, in fact. Possibly detrimental to the overall aims, depending what our aims are. To backtrack, I mean, the question is why we're reformulating. If we were reformulating to take out sugar, salt, and fat, for example, then that's because we think that's where the problem lies.

And of course, traditionally that's where, that is where the science lies. That's where the, expert, the expert opinion has been that they're, they're high sugar, salt, fat foods, and of course, that's the name we have for them. For those who haven't yet accepted the ultra processed food concept, they still refer to them as “high sugar, salt, fat food”. So for those people, that is the problem and that's the solution, taking those out. But even if you thought that was the problem, I think there's a number of reasons why reformulation isn't going to sort of take us there for both technical reasons, but also political reasons. But backtracking, I mean, it's interesting.

I mean, that's a traditional approach, sugar, salt, and fat. And even though I think that's not what's wrong with these problems, that's not the be all, end all, it's still a useful way of actually identifying the foods because in fact that's where, in fact nutrient profiling I think isn't a good way of identifying the overall quality of a food.

But, it is a useful way of identifying ultra-processed foods. Because most ultra processed foods tend to be high in one of those nutrients to limit nutrient the problematic nutrients to salt, the sodium, the sugars, the saturated fats, the energy density, trans fats, and so on. So that's why some of the front pack labeling systems, like the warning labels that we find in Chile and Mexico, even though they're only pointing to the sort of nutrient profile, they're actually in a sense helping us identify ultra processed.

So they're useful way of identifying ultra-processed foods, but it's not the problem with them, and it's not the solution. But taking those out. So as we've already alluded to, it's that even though that's a key component of these foods, they're made up. But that's the reason is why is all that sugar, salt, and fat there?

And it's because partly because they've been processed in a certain way, which would destroys the integrity of those foods. So that's a starting point of the problem. That's part of the problem. Then of course they add all these sugar sugar and salt and so on. And now why reformulation, even if some of these ingredients are a problem, if we just focus on those, it's not necessarily going to get us where we wanna get to because one is the food industry has learned over many years how to deal with reformulations simply by substituting.

One ingredient for another, and one not necessarily any more healthful ingredient. And of course they've been doing since, since the 1980s. They've been taking fat out of the food to make low fat foods and substituting with something else. It could be an artificial fat or it could be sugar, and so on.

The food industry has perfected these techniques over many decades and also how to market these foods in that way. And that's why I actually think reformulation is a strategy. Invented by the food industry. It was invented by them back in the eighties. First as a marketing technique, and then later as a political strategy to say, actually, we're going to reformulate our foods.

That's how we'll make them better. You don't need to regulate us. So it's kind of disappointing that the nutrition and public health community have latched on to reformulation as a solution when it was always a food industry in strategy. And there's a number of problems with free formulation I've mentioned.

One is that that simple substitution doesn't necessarily get at the multiple problems with these foods. It's just adding another ingredient, which itself is often highly processed, highly ultra processed, and not very nutritious. These foods are are not nutritious to begin with. So just taking some sugar out doesn't suddenly make them nutritious.

And that should be our goal producing nutritious foods. So there's a substitution problem. There's also the way in which we do reformulation that lot. Often it's voluntary. There's sort of targets that are set, and so on. But aside from the sort of the technical dimensions of that, that doesn't actually get us towards a processed food, it's also missing the whole, in a sense, political dimension and the fact that these, it's still these food companies that are producing these foods and marketing them and distributing them aggressively and trying to displace minimally processed foods from our diet.

All those things I talked about earlier, which is to do with the purpose of processing. This is getting back to the definition of ultra-processed foods. What that definition is telling us is that the social and the technical characteristics of ultra-processed foods, you can't separate those two things out.

They're embedded in the foods themselves, and when we think we can just do technical tweets to food and ignore who's producing that food. Because I think no matter, you know what reformulation is, as long as the food this, these transnational corporations are producing our food, they'll always find ways of destroying the foods and our diets, because that's, that's where the most profits are to be made.

There's just no two ways around that. They'll always want to produce foods that we want to eat more of, even if the foods have got a bit less sugar on them, in them. In fact, we'll end up eating more of them because they're continuing displace other foods from our diet really need to step back and think about the place of these corporations and these products in our diets.

To think that all those problems that I've pointed to think to just substituting one in one nutrient or one ingredient changes anything. In fact, what it actually does is provide scientific legitimation for these foods. They say: “okay, we've got the sugar down to a respectable level, therefore, the food's okay”. But it also provides political legitimation for these, for these foods and these companies because then they get the tick of approval from governments and off they go. And they don't, they don't need to be regulated. They don't need to have a warning label on them.

They don't need a tax on them or what They don't need to be restricted for from sale in schools. And what it never addresses is the fact that we, that the proportion, once again, it's his focus on food, on the food itself and the single food product and think if we can just tweak those individual products, it ignores the dietary pattern effect.

The fact that these foods are filling up our diets and we, that's why we need to reduce the overall consumption of these foods, regardless of the particular composition of particular foods.

Danny Lennon: Beyond looking at the nutrient profile has this dietary pattern effect, but it also, like you said, has this social impact as well.

And it ties into the whole conversation around health inequality and wealth inequality and, and the links there. And then it also looks at the means of production. And tying back to what you said earlier about the purpose of it, and as you were mentioning some of that, it reminded me of a recent conversation I had with Professor Emma Boyland about food advertising and marketing by the food industry particularly aimed at, at children in that context.

But it has similar parallels here. Professor Boyland was making the point that some policies that come to try and counteract some of this marketing can have unintended consequences when the industry just works around it and finds a different way to market something else. In the same way here we're saying a reformulation could lead.

Indeed a change in a certain nutrient, but again, just reformulating into another product that isn't necessarily a healthy product to consume. But now they've got some seal of approval. And I think in line with much of the

evidence we have around advertising, when you look at self-regulation by industry almost is never effective and never works compared to something like mandatory regulation.

And so these voluntary targets are never going to be that useful. And to tie back to one other podcast episode with, with Karina Hawks, she spoke very eloquently to a point you've just also talked about of really the need is to look at this at a food systems level. On a more global level of how we're actually getting food to people and the whole system together.

Gyorgy Scrinis: If I can just speak to that… There are so many drivers of the production, distribution, and consumption of ultra-processed foods, and you've gotta address all those drivers. Otherwise we're going to keep consuming more and more and we can go right back to the agricultural level, the production of the commodity crops and the subsidies that go towards them, the free trade agreements, which make it possible and new technological innovations and so on.

And while we can build up, just as, just as we build up a complex sort of picture of the sort of biology and nutritional science of these, of these foods, we we're also, there's a whole team of researchers now working on building up that more complex picture of all those various socioeconomic and political drivers.

And there's some terrific work going on there, but we shouldn't. Get lost in that complexity because at the, ultimately there are these very large transnational corporations which are integrate, which are coordinating and integrating all of those various socioeconomic food system drivers. You know, they're sourcing the ingredients in all sorts of ways.

They're developing the technologies and the packaging and so on. And cultivating that whole supply chain. But then they're also doing things like actively lobbying governments and shaping food, food policies in it. Melissa Mellon's work is fantastic in his field of sort of corporate political activities that these industries are involved in.

They're also heavily involved in shaping the science, the scientific research. Marion Nestle, Lisa Barrow's work is fantastic here. And so these companies, they're coordinating the entire sort of ecosystem vault process foods, and the

idea that we could actually just in a sense, so perhaps reformulate the products, but even just, just look at the advertising, for example, or just look at this or the aspect of what they're doing.

Is no match to the very highly integrated strategies that they have developed over many decades. And if they've taken their, their lead from other, other industries like the tobacco industry and the gambling industry, they've really refined all of their techniques for making profits and controlling the whole and whole environment.

And at the unfortunate, at the moment, the policies that we are developing are no match for these corporations. They're just, we we're starting to get going. You know, it's great. We've got a little bit of front and pack labeling, a few taxes and and so on. But this is no match for the power of these industries.

Danny Lennon: Yeah, like you say, it is so troubling when you look into this and just see the level of influence they have in the policy making decisions, right? Of not even responding to policy or just lobbying beforehand, but are actively involved with that process is kind of insane when you think about it. And so given that level of industry power and influence, and like you said, it is very complex, both the problem and maybe the solutions going forward.

But if we are trying to think about, well, what direction do we take, obviously one of them is around regulation and policy at a a government level, and this runs us into the problem then around political will, which will vary from place to place and who happens to be in power at that time. And I wonder how much of a barrier that ends up being, of how much drive really is there in some of the current governments, at least in the western world, to really do the things that would be necessary to make the type of changes we, we may have been talking about here.

Gyorgy Scrinis: Look, there's not a huge amount of political will because of the nature of very many neoliberal governments and the influence of the industry. But we've also seen, will that be being, getting too pessimistic. We've also seen some really big steps forward in some countries just in recent years. It's fantastic what's been happening in some countries, in Latin America, small steps. But in Chile, Mexico, Brazil, Argentina, they are passing laws despite the pressure from the food industry. So even the small gains

there is in the face of huge food industry pushback and influence within government.

So that's certainly starting to happen, but we also need the researchers actually putting forward some credible policies as well. That, and once again, going beyond this idea that this tweaking the nutrients is going to get us out of this mess and that we really need a comprehensive set of strategies that ultimately here focus both on limiting and reducing consumption of ultra-processed foods, but in parallel with that, directly confronting the power of the industry of these transnational companies.

I should also say, I mean there's another half of the equation we haven't mentioned here. People have to eat something and there's a reason why people are not always, I wouldn't use the word choice, but they're eating these foods because often because they're convenient and they're cheap, we know there's a socioeconomic driver here.

People have limited time. The hours that they work, the burden of cooking is still on women, and women often having to hold several jobs and raise the kids and so on. There are multiple drivers of consumption of ultra-processed foods. So it's all very well if we ever manage to sort of stifle the production and distribution, and consumption of these foods, we need to think of other ways.

How do we produce, prepare, distribute, and share processed and mentally processed foods? And this is a real problem in high income countries, like in countries like Australia, perhaps the UK, the USA where the alternatives have already been wiped out long ago because the industries took over and industrialized our food supply very early on.

But these alternatives still exist in many low and middle income countries. And that's precisely why this work is so important in those countries. Because it's not trying to, it's not so much about trying to reverse that consumption at this point. It's simply to stop the wave of ultra-processed foodsthat are coming their way.

Because we know that once that wave comes… because what ultra-processed foods do is they don't just displace minimally processed foods and traditional foods. They also displace the producers of those foods. That's

what they're designed to do. They displace the smaller food companies, the restaurants, the street food, and ultimately you as, as a cook in your own kitchen.

That's what they're aimed to do. That's how food companies grow the pie. They're all collaborating on this together. They're trying to grow the pie, which means displacing the, but of course, once you displace those, those producers, where else do people go to get prepared, nutritious and perhaps afford affordable minimally processed foods.

That's our challenge in countries like Australia. How do we bring that back? What does that look like? And then the challenge in the low middle income countries, how do they stop this? This the onslaught from the, from the corporations. I

Danny Lennon: mean, there seems to be a kind of two-prong issue in some of the, let's say, westernized countries. That we mentioned higher income countries. For example, if we take Australia or the UK, these are examples where there is a need for political and regulatory change to start reversing that process as we've already outlined. But really doing that without addressing some of the social inequalities that exist in many modern societies kind of will fall flat.

And in one of, the previous conversations I've had with, professor Martin Caraher, who's based in London and was talking specifically about food poverty in the UK and he says, you can look at a situation where people are making decisions to consume more of these processed foods that are very rational decisions that for them, they don't have a refrigerator to keep chilled food, so they have to buy can foods. They can't afford to turn on the oven, otherwise they won't have heating today. So they, they're making a calculus in their mind. And until we really solve some of those issues, it's hard to see how we're going to completely move back to where we wanna be. So it’s very intertwined with a lot of complex issues.

Gyorgy Scrinis: Yeah, absolutely. And Martin Caraher has done work on food poverty. He's is fantastic in that respect and you know, he's documented the rise of food banks and so on. Because yes, inequality and poverty are key here and reversing this. That's why we simply have to address that in and of itself; inequalities in society, social inequalities.

But also there are many things we can do within the food system to make those foods more affordable. And goes all the way back to the agricultural system. What sort of foods we're producing back on the farm, diversifying that food supply, maybe shortening supply chains, cutting out some of the middle men, making that food more available.

The nutritious, diverse foods more available to local populations. That's doesn't mean people have to go back to cooking themselves. How do we, how do we prepare foods and share foods and make those nutritious and affordable? I mean, I think that's a big challenge.

Danny Lennon: There's so many of these topics we could probably spend multiple hours talking about each one. But, an attempt to start wrapping this up here, Gyorgy, one of the things that comes to mind here is that there's obviously great work going on in in public health, nutrition, general health policy, and we've mentioned some of those researchers, but many people listening and including myself: my background specifically being nutrition science.

And if we're coming from it from just that view, what are some things you think those deeply embedded in it, in a strict nutrition science, background can learn from social science, and particularly when we start applying it to these bigger questions around nutrition and food. What are some lessons you think we can learn from social science?

Gyorgy Scrinis: I think a lot, and partly because I. And when it gets down to, I think we cannot separate the social from the technical humans from the ecological the social and ecological and so on. I think you can't understand health and disease just by looking at the sort of physical components of food, for example.

So it’s in the very nature of the problem itself. You know, ontologically what you know, the nature of the problem is not just what you're eating, but the broader social context, which is shaping that diet, but also shaping other ways in which. The food's consumed, how it interacts with other aspects of your life, and so on.

So I think the nature of the problem is, goes beyond those nutritional components, if you like. But the other thing is in terms of how we understand

even those nutritional issues, one thing that social science is good at is putting issues and any, whatever it might be, into a context, into a broader context, and definitely a social context, but also an ecological context.

And the sort of problems with nutrition, science that I've been describing is the opposite of that. It's this constant reductionism, this constant attempt to reduce foods, suggested nutrient components, or if it's not nutrients, maybe it's some sort of ingredients or other physical characteristics of the food.

But it's always this idea that, okay, we've gone beyond nutrients, but now we can sort of have this other equally precise way of talking about the role of food. I never think, I think that's never possible. We always have to put nutrients, foods into a broader dietary pattern context, but then also social and ecological context.

That's the hard bit. I think it's really easy just to reduce and think we can talk in really isolated terms about these components. The harder thing is to connect up the dots and to come up with frameworks and theoretical frameworks which tie it all together. These, these various layers of the, of the technical, the social, the ecological, speaking really broadly, philosophically, that's what, what I think where the sciences need to go.

And I should also add, my sort of criticisms of nutrition science are not restricted to just nutrition science. I think nutrition science is no different to any of the other technical sciences whether it's biology or chemistry or engineering, whatever it might be. I think all those fields actually have all those reductionist tendencies in, in those, in those various forms of reductionism. You know, we should always be trying to bring broader perspectives and particularly social, and ecological perspectives, into those sciences for people listening.

Danny Lennon: And a number of those who listen to this podcast are either involved in academia or at least like to get involved with conversations on online with nutrition, academics or people who think deeply about some of these topics.

And as we've noted, ultra-processed foods is quite a big topic to discuss right now. What do you think are some unanswered questions or the interesting

questions that hopefully future research might unfold or that to your mind you would like to see more discussion about, at least?

Gyorgy Scrinis: Look, I think we're at the very, very early stages of, we are just scratching the surface here of this social process, food work. It's only, the concept itself is only 10 years old, drawing on some older work that was done. But really we're still just staying to grapple. I think a lot of there's quite a bit of debate at the moment around the limitations of the NOVA framework and ultra processed food concept. And I think some of those, some of the discussion is a bit missing the point about ultra-processed foods.

Because I think it, it's performing a certain role, this concept in, in flagging this, this whole category of foods. Now certainly we can dig down into the more specific components and all this work going on around so-called mechanisms, the various sort of nutritional and biological mechanisms that work needs to go on.

But how we interpret that work is just as important. And I don't think it it undermines in any way. They're not this broad category of ultra-processed foods. Now, we might actually wanna start building in other types of frameworks as well for making other types of differentiations between, between types of processed foods for other purposes.

But I think some of the criticisms have missed the point. That's not to say there isn't a legitimate discussion and debate to be had around the ultra process food concept, but what's disappointing is when that debate gets reduced to some of these technical distinctions that we're making and technical criteria.

But really the really important work to be done, I think, is to start to integrate the various levels of understanding of these foods. Some of this nutritional work or some with, together with some of the social and political analysis. So there really is so much work to be done. But what's happening is there are so many research groups around the world now embracing this framework, the classification system and the ultra processed food concept.

And they're starting to do the analysis and we're also seeing policy makers engaging with the concept. We haven't yet seen any governments explicitly say, "okay, we're going to regulate ultra-processed foods", but they're doing

it in indirect ways. And there is something very intuitive about this concept of auto process foods.

I think people get it. People without a nutrition science degree just intuitively get it. The public gets it. Some politicians get it, and it speaks to people. And this once again speaks to the way in which I think our scientific concepts have to be socialized. And that's what this, I think the Nova classification does.

Scientific classification system, which has a social dimension built into it. And that's why people understand it. And I think that's what all good science is. It it cannot be limited to the technical dimensions, of life. And that's why I think this, this concept has been embraced.

But yes, I think we're still at the very early stages of filling out both the technical picture, nutritional science picture, but also the more broadly socio ecological picture. And we are actually seeing some work now being done around the ecological impacts of these foods as well. And this also starts to fill out that picture.

Danny Lennon: So for people who are interested into digging into this topic or your work more broadly, where are some places on the internet we can, send their attention?

Gyorgy Scrinis: So I haven't got too many places to go. Probably my university website. You'll find a list of my publications, probably my Nutritionism book summarizes some of the, certainly the critiques of nutrition science and also starts to discuss some of these issues around food processing.

Danny Lennon: So with that, we come to the final question that I always end the podcast on, and this can of course be to do with something even outside of our conversation topic today. And it's simply, if you could advise people to do one thing each day that would have a positive impact on any area of their life, what might that one thing be?

Gyorgy Scrinis: Oh boy. It might be a bit corny. Prepare yourself a salad from fresh vegetables and greens from the garden. I'd say is the simplest thing you could do. I think we can't get enough of that.

Danny Lennon: Dr. Gyorgy Scrinis, thank you so much for taking the time to come and talk to me for, for the great conversation and then more so for the work you've done and the publications you've put out. It's been a honor to be able to talk to you about some of today. Thank you so much.

Gyorgy Scrinis: Thank you, Danny. I've really enjoyed this.