



Food, Diet and Obesity Committee

Corrected oral evidence: Food, diet and obesity

Thursday 22 February 2024

10.35 am

Watch the meeting

Members present: Baroness Walmsley (The Chair); Baroness Boycott; Baroness Browning; Lord Brooke of Alverthorpe; The Earl of Caithness; Lord Colgrain; Baroness Jenkin of Kennington; Lord Krebs; Lord McColl of Dulwich; Baroness Pitkeathley; Baroness Ritchie of Downpatrick; Baroness Suttie.

Evidence Session No. 2

Heard in Public

Questions 10 - 23

Witnesses

I: Dr Chris van Tulleken, Associate Professor, University College London (UCL), and Author, *Ultra-Processed People*; Henry Dimbleby, former UK Government Food Tsar, Department for Environment, Food and Rural Affairs, and Author, *Ravenous*.

Examination of witnesses

Dr Chris van Tulleken and Henry Dimbleby.

Q10 The Chair: Good morning, everyone, and welcome to this public meeting of the House of Lords Food, Diet and Obesity Committee. Today, we are holding the second of our evidence sessions in the committee's inquiry, exploring the role of food, such as ultra-processed foods and foods high in fat, salt and sugar, in a healthy diet, and tackling all kinds of food-related illnesses, but obesity in particular. The committee will be taking oral evidence over the next few weeks and months, and that will help us to put together our report, which will be published later in the year.

We have published a call for written evidence, which was put on our website earlier this week and can be accessed there. We expect an awful lot of evidence to come our way.

Today, we are going to be hearing from Henry Dimbleby, the former UK Government food tsar and author of the book *Ravenous: How to Get Ourselves and Our Planet into Shape*, and Dr Chris van Tulleken, associate professor at University College London and author of several books, including *Ultra-Processed People: Why Do We All Eat Stuff That Isn't Food ... and Why Can't We Stop?* You are both very welcome this morning and we are looking forward to your evidence. When I come to you, please introduce yourself briefly before answering the first question.

Today's meeting is being broadcast and a written transcript will be taken. It will be sent to both of our witnesses so that any small corrections can be made before it is published. First of all, I refer to our list of Members' interests, including my own, which is on the website, and was set out in the first evidence session on 8 February.

The first question is a very general one. What are the most common diet-related health issues and how prevalent are they?

Henry Dimbleby: For five years, I was the lead non-executive board member at the Department for Environment, Food and Rural Affairs. While I was there, I authored the *National Food Strategy*, which was an independent review for government, published in 2021. It set out how we can create a food system that not only produces sufficient nutrition but does so in a way that restores the environment, keeps us healthy and is secure in the face of the various and increasing threats that are facing us.¹

The threat from food now completely dominates the health of our population. It is by far the biggest cause of avoidable illness. If you want an example of how seriously it is being taken, during Covid, Chris Whitty

¹ Note from witness: I have voluntarily declared the following interests: Former DEFRA lead Non-Executive Director; *Ravenous*—author; *National Food Strategy*—author; School food plan—coauthor; Chefs in schools—Cofounder/chair; Sustainable Restaurant Association—cofounder; Bramble partners—investing in improving food systems, managing partner; Director of: Fortnum's; Westmorland; Rockfish; Meatly.

was giving online lectures in his free time, to anyone who would listen, about the harm that diet was doing to the NHS and to society.

By 2035, it is estimated that it will cost more to treat type 2 diabetes—which is just one condition caused by diet—than the cost of treating all cancers today. For the 2.8 million people who are long-term sick and out of work, the Treasury thinks that the four biggest conditions driving that are type 2 diabetes, muscular skeletal problems, hypertension and mental health. Three of those are directly caused by diet, and mental health is exacerbated by diet—it is a co-factor.

I do not think it is an exaggeration to say that this is going to be one of the huge problems facing society over the next 10 years. If we do not get a grip on it, because of that lack of productivity it will make us not only sick as a society but poor as well, and we are behind the curve.

Dr Chris van Tulleken: I am a broadcaster, mainly for the BBC, and an academic at University College London, where I study nutrition and the commercial determinants of health, and I am a doctor in the NHS, where I am infectious diseases specialist.

I am here because, as a young doctor, I spent a lot of time working in complex humanitarian emergencies and conflicts in very low-income settings. I saw a lot of my child patients die from infections. Their deaths were caused not by a lack of antibiotics but because of the marketing of baby foods that their parents could not afford to buy, because their parents could not read the instructions to make it up, and, most importantly, because their parents could not access clean water to make the food with. There was no way of avoiding deaths. The companies that I saw doing this in those countries are the same companies that are now funding people on our Scientific Advisory Committee on Nutrition, our major food charities and this country's academic research departments on food and nutrition. That is what motivates my academic work and my activism in this area, and that is why I am sitting before you today.

I agree with everything that Henry said. The most visible cause of the pandemic of diet-related disease is obesity. Around a quarter of children aged 10 are leaving primary school with obesity. That is an obscenity, and we would never tolerate it with anything else.

It goes hand in hand with stunting and malnutrition. In the UK, children at the age of six—the age of my daughter—are between around 7 centimetres and 9 centimetres shorter compared to their counterparts in eastern Europe, northern Europe and Scandinavia. We know that obesity, malnutrition and stunting is driven by diet. The lack of exercise and activity is another national pandemic, causing a huge amount of disease and disability, but it has very little to do with stunting or obesity—perhaps as little as 5%.

As well as obesity and stunting, we have meta-analyses—big datasets that aggregate other big datasets—linking fat, salt, sugar and the category of ultra-processed food to a wide range of what we

euphemistically call negative health outcomes. These span everything from dementia, anxiety, depression, cardiovascular disease, metabolic disease, cancer, inflammatory bowel disease and early death from all these causes. These are not one or two studies; this is a very large body of robust peer-reviewed data, and it applies both to nutrients and to the category of ultra-processed food. We cannot afford this at all, and so we need to use government as a tool to regulate this industry.

The Chair: We are now going to move into the causes of all this.

Q11 **Baroness Jenkin of Kennington:** In your view, what are the main barriers to eating a healthy diet, and what are the most effective strategies and approaches to overcome them?

Henry Dimbleby: The fundamental cause of dietary ill health is an escalating broken feedback loop, which we called in the *National Food Strategy*, the “junk food cycle”.

Effectively, you have got what is known as an evolutionary mismatch. We have an appetite that evolved in a time of calorie scarcity, which rewards us for finding calorie-dense foods. We find those foods particularly delicious, especially when they have certain ratios of fat to sugar to salt, which become known as hyperpalatability. They also fill us up less quickly. When such foods have certain other characteristics—such as softness, a lack of insoluble fibre and water, calorie density—the problem is exacerbated.

Food companies—not because they started out as evil but because they noticed where the money was to be made—have, over time, invested more and more of their resources into developing and marketing those products. You can now buy 29 different forms of KitKat in this country. That kind of food has come to completely dominate our diet. You saw it in the paper from Oxford this morning, in which over two-thirds of the processed food that it looked at was unhealthy. In the UK, we spend £2.2 billion a year on fresh fruit and vegetables; we spend £3.9 billion a year on confectionery, which is just one small category. This food has come to completely dominate our food system.

If you want to tackle this, you have to break that feedback loop. You can do it in two ways. In the food strategy, we focused primarily on ways in which you can break the commercial incentive and make it less commercially attractive—we can go into that in more detail later, if you want—such as through taxes, restricting advertising and so on. It is necessary for the state to do that if we are to solve this problem; it is not the only thing that needs to be done, but making it less attractive for companies to sell us this stuff is important.

The other side of this is that you can change our evolved appetite. At the moment, in the absence of pretty much any action from government on this, we are seeing the rise of Wegovy, Ozempic and semaglutide. One appetite-suppressant drug is now so popular that it is almost impossible for diabetics to get it in this country. Those drugs—there are four or five

of them—are coming down the line. Last week, I was with Tony Goldstone, who is our top expert on these drugs, and he said that one in tablet form may well be available soon.

I fear that, if there is a lack of action to improve the food system, what will happen—and it will have all sorts of negative connotations—is that we will increasingly drug our way out of the problem. As with antidepressants, we will end up with 30% of the population on diet-suppressing drugs. This will move the profits from the food companies to the drug companies.

In my view, that is problematic for two reasons. Some people ask, “What’s the problem with that?” You have to say, “Here’s the problem”.

Dr Chris van Tulleken: I will explain.

Henry Dimbleby: There are two things that really worry me about that. One is this: if you have leptin deficiency, the only way of not dying from that condition is to be injected with large amounts of leptin. For some people whose genetics make it very hard for them to maintain a healthy weight, those drugs could be important and could change their lives. If you start giving them out in huge quantities, you will almost inevitably get tail effects. There is a risk of them becoming something that people who really need them do not want to take.

My other worry is that, at the moment, these drugs replicate the actions of one hormone—perhaps two, in some cases, and new variants are looking at different hormones. Those hormones evolved over a long period of time and have multiple roles in our body. They evolved through random mutation and selection. If you talk to doctors, they will tell you that no drug has ever ended up doing what you thought it would do at the beginning. This will inevitably cause problems down the line.

To summarise, it is the commercial incentive, along with our evolved appetite, that is causing the problem. If we want to tackle the problem in a sustainable way, we need to tackle that commercial incentive. The state is the only institution that can do that.

Dr Chris van Tulleken: Following on from what Henry said, another troubling aspect of the commercial activity is that we have seen movements from some of the big food producers to try to buy the divisions of pharma companies that produce drugs for diet-related disease. Obviously, this is a sensible thing to do if you run a food company; if you can simultaneously create a problem and solve it, that works very nicely for you.

In some of the studies of nutrients and categories of harmful food, such as ultra-processed food, we see that, even if you control for obesity as a variable, the other negative health outcomes still get expressed. In other words, obesity is a driver of cardiovascular disease, strokes, heart attacks and metabolic disease. But even if you do not gain weight, our current food environment seems to be driving a lot of health harms. As Henry

said, you can take semaglutide or GLP-1 agonists, but if you continue to eat the same diet in a lower quantity, you may still be at risk of lots of the other problems, such as cancers.

I am going to talk a bit about smoking. If we had held this committee meeting in the 1970s, perhaps even the early 1980s, we would all have been sitting here smoking—at least, many of us would have been. It would be fun to go back and look at archival photos, if they exist. If any one of us had been trying to stop smoking—because, by the 1970s, it was widely known that cigarettes caused harm—it would have been nearly impossible. There would have been cigarettes for sale in vending machines and multiple opportunities; our cab driver coming here would have been smoking.

The same is true for the current environment and harmful food. Whether we call it high-fat, high-salt, high-sugar or ultra-processed food, it is ubiquitous. It is all around us and is marketed to us constantly. On the “Today” programme this morning, we heard from a young Bite Back activist, who talked about these predatory techniques: for example, the last text message that children get at night is from a food company giving them a discount deal.

Those of us in this room will be insulated, frankly, by a degree of privilege. We pay for our music apps, we subscribe to channels and we do not buy bus tickets. If you are a 10 year-old in this country, on your bus ticket is a 2-for-1 offer for a junk food meal. All your music is paid for by junk food and ultra-processed food companies. You will get direct messages and it will be on billboards. Between home and school, there will be 50 opportunities for you to buy these products. It is universal.

We are very sure that these products are addictive. I say that as a scientist and as someone who knows the teams at Yale and Princeton that have done work on addiction; I also say it as someone with lived experience of addiction to these products.

Henry Dimbleby: The smoking thing is really interesting. The other day, I was talking to a group of sixth-formers in a school in Hackney. I said that, although we might go down the drug route, I am hopeful that we might live in a world where we can significantly change our food culture. They were like, “Come off it, that’s not going to happen”, with their Prime and their this, that and the other.

They all vaped, interestingly. When the teachers went out, I asked how many of them vaped; they all did. They thought that cigarettes were disgusting.

I told them that, when I was young, we could smoke on aeroplanes and on the Tube. They were like, “No! That’s incredible!” I think that, if we are to win this fight, we must believe in a future where we will look back at today and think, wow, that was the time when we ate all that stuff, which was a bit weird. We need to maintain the belief that this cultural fatalism, where culture cannot be changed, is both wrong—there are all

sorts of examples of cultures being changed over time—and completely defeatist. We need to fight it tooth and nail, all the way through, to get this to change.

Q12 **Baroness Boycott:** I have interests to declare: I was an adviser on Henry’s food strategy and am a patron of Chefs in Schools, which he founded.

I want to ask you where we can get more information. I did not know that, on the back of a bus ticket, you can find a 2-for-1 offer on junk food. I do not know how many people around this table knew that, but I found it absolutely shocking—and I think I know quite a lot.

Dr Chris van Tulleken: You did not know that, because in London we do not have bus tickets.

Baroness Boycott: I thought I knew quite a lot, but I was completely shocked by that. You also mentioned a load of other things. How can we get at that data?

Dr Chris van Tulleken: I am sure that we will both submit written evidence. I will produce this.²

Baroness Boycott: I would really like you to do that.

Dr Chris van Tulleken: I know about some of this from speaking to the young activists at Bite Back. I went to Leicester with some of them, and they showed me their bus tickets and made me listen to their music. They showed me the free wifi in McDonald’s. From where we stood, under the clock tower in Leicester, you could see, I think, three branches of Greggs and two McDonald’s. You could see every single fast-food chain that you could name—and more than two branches for some of them.

Baroness Boycott: I know that Pokémon Go used to take people to McDonald’s because it paid for part of the app. For us, as a committee, it is about examining that unseen commercial relationship—at least, it feels unseen to me.

Henry, I want to go back to the business about Ozempic. What do the Government think about it? Are they encouraging it as a kind of “get out of jail free” card?

Henry Dimbleby: I sense that, in government—in the Tory party, that is—there are the beginnings of a really fundamental change. There is still a hotly debated ideological battle about whether we believe in the nanny state. In *Ravenous*, we talked about how the phrase “nanny state” was coined in the *Spectator* in the 1960s, at a time when a lot of our leaders had grown up with nannies and had conflicting opinions about them.

² Note by witness: Filming a BBC documentary in 2020 I went to Leicester with Dev Sharma, an activist with the Charity BiteBack. He showed me the vouchers on his bus tickets for McDonalds.

Now, I largely see that gradually being overturned, particularly because of the state of the economy.

The Institute for Fiscal Studies put out a piece of work showing that the overall cost to the economy is now just under £100 billion a year. That excluded the cost of children and adolescents, and it was just obesity and not the other things.

It is impossible to be in government now and turn a blind eye to it. For whoever wins the next election, it is late but it cannot be ignored. Danny Finkelstein said in the *Times* yesterday that he believes that everyone should be allowed to smoke and that he was going to write a piece saying that we should not have the smoking ban. He then sat down and looked through the evidence, and thought, "There's no way I can make this argument anymore". We are getting to that stage with food too, where the evidence for the damage to health, productivity and peoples' lives is incontrovertible. Every year, we lose just over 1.5 million years of life to diet-related disease. That is life not only lost to the person but to their family and children; it is years that grandparents could spend with their grandchildren. It is an absolute catastrophe. I am optimistic, because I think it is impossible to ignore anymore.

The Chair: I am sure many of us would prefer a caring parent to a nanny—somebody who puts up the fireguard and fastens our seatbelt.

Dr Chris van Tulleken: I have something to add on the drugs for diet-related disease. During the ongoing pandemic of tobacco-related disease, it was right that we developed drugs to treat cancer and emphysema, and it was right that we celebrated those drugs. But the budget for their development and use should never have encroached—and it did not, really—on the budget for preventing tobacco-related disease.

It is axiomatic, but prevention is always better than cure. We can celebrate these drugs, and they are a great thing. But we cannot afford them, they will not work as well they do in the trials, and, at the moment, we are giving them to people who are already suffering. You have to suffer for a certain number of years—emotionally, physically, psychologically and socially—before you become entitled to these drugs, and then you have to be on them for life, and many people will not be able to take them.

It is fine to celebrate the drugs, and I am not anti-drugs, but they are not the answer, not by any means.

Q13 **Baroness Suttie:** What is an ultra-processed food, and how would a member of the public recognise it?

Dr Chris van Tulleken: It is important to say that the definition of ultra-processed food was not developed as a consumer tool or a policy instrument. It was a definition developed in order to test a hypothesis that came out of data. A paradox was observed: families in South and Central America who were buying more oil and sugar were healthier than families who were not. Scientists in Brazil, led by Carlos Monteiro and his

team, created a definition to describe this new influx of food that had broadly followed the North American Free Trade Agreement, and had driven a very rapid expansion of diet-related disease. In a single generation, obesity went from being almost unheard of to being the dominant public health problem. That was where the definition started. It was to try and delineate this very big category of diverse foods.

It has proved to be enormously successful for that. We have more than a thousand scientific papers using that definition, and it has been used very successfully for some very robust research by different research groups around the world.

If a consumer wants to understand the definition, they can go to the United Nations food and agriculture website and look up all nine paragraphs—I am one of the very few people who has actually done that. A good working definition would be that, if a food is wrapped in plastic, and has at least one ingredient that you do not typically find in a domestic kitchen, such as mono- and diacetyltartaric acid esters of triglycerides of fatty acids, then it is probably an ultra-processed food. There are other good working definitions. Most of the products made by transnational food corporations are ultra-processed, as are most foods with a health claim on the packet. If you are reading an ingredients list, you are probably looking at an ultra-processed food.

It is a way of describing, in the tightest way possible, the category of industrial food; it is a way of describing a dietary pattern. The evidence applies to the category and to the dietary pattern, not to the individual product. We need to look at different evidence when we talk about individual products. If you are reading an ingredients list and it has got something funky on there that you do not recognise, it is probably ultra-processed.

Henry Dimbleby: There is a lot of mildly irritating debate around whether ultra-processed foods are a good or a bad thing. Most of them come about because people, often wilfully, are trying to use ultra-processed food in a way in which it was not meant to be used in order to protect the interests of food companies, or are being hyperliteral.

If you look at the 57% of food that we eat that is ultra-processed, using the Carlos Monteiro definition, you find it is true that 11% of that is bread, and roughly 25% of bread—so 3% of the ultra-processed food that we eat—is brown bread. One of the big problems we have is not enough fibre. In the *National Food Strategy*, we said we need to increase the amount of fibre we eat by about 50% on average. If someone who ate a lot of sliced brown bread took the ultra-processed food definition completely literally and gave it up, it might not be a good decision for that person. As Chris said, that is not what the definition was about.

There is another way to look at it, as we saw with the British Nutrition Foundation and in the SACN report. They took a hyperliteral approach to the evidence of individual products, not the category, and made the point

that most of that food is bad for you but some of it might not be. I think they were missing the point.

I like the term ultra-processed food, much more than the term junk food. Junk food is something that we all enjoy—a naughty or secret pleasure. What ultra-processed food has done very well, both at a category level and as a framing, is to reflect an underlying truth: that this is not a bit of pleasure but a huge industry messing with you. People do not like being messed with by “the man”.

The reason it has cut through is not because of the details of whether brown bread is good or bad for you but because, fundamentally, of the huge amount of money being made from things that are doing you harm. For me, that is why it has been such a useful definition.

Lord Colgrain: Chris, can I ask you a bit more about the definition? If a product has a sell-by date on it, what does that indicate to you? Does it mean that it is more likely that it is an ultra-processed food, or not?

Dr Chris van Tulleken: I do not know, because I do not know the regulations on sell-by dates. All kinds of odd things have sell-by dates. Most of the calories sold in supermarkets are ultra-processed.

The thing about the definition, and Henry makes this point very powerfully, is that it tells us about the category of interest, the kind of food we want to regulate and a harmful dietary pattern. We have studied all kinds of things about nutrition and there is very wide agreement on healthy diet. There is a Mediterranean diet, for example, and we have very good evidence around dietary risk factors such as pulses, wholefoods, saturated fat, processed meats, fruit and vegetables; everyone has great consensus around that. We also have great evidence that there is a single pattern of diet that drives harm: an industrialised, American diet, produced by transnational food corporations.

UPF is not a regulatory tool—I do not know anyone credible who is talking about using that definition to slap labels on things—but it describes this group of food. We get in knots about bread. Bread is the perennial one. There was a subgroup analysis of a cohort study done recently that found that, in the context of an ultra-processed diet, eating more wholegrain ultra-processed bread is good for you. Eating more wholegrain bread is better for you than eating more chocolate; I do not think anyone is very surprised by that. What the subgroup analysis does not stand up to is this: if we were to eat actual wholegrain bread rather than emulsified foam, would that be better?

We cannot extract that from those data; they are too tangled—you cannot do it. There is some unpublished work that will explain the statistics around why you cannot do subgroup analyses and work out whether bread is better or worse than ice cream. It is the wrong question to ask.

If we want to understand bread, we need to look at the bread and ask what we know about food. If we look at an emulsified wholegrain loaf, of the kind that 98% of supermarket bread is, we need to ask what we understand about food and what evidence we can bring to bear. What are the levels of salt and sugar? How soft is it? How energy-dense is it? Does it contain additives about which we have reasonable evidence to be concerned? The answer for supermarket bread is yes, yes, yes and yes. If we look at real bread made of whole grains, we find that it is generally very healthy. It will have very little sugar and much-reduced salt, and it will not be full of emulsifiers and palm fat.

Henry Dimbleby: I think that the question is indicative of the category error people make. Why do you want to know? In asking whether having a sell-by date on it means that food is ultra-processed, you are looking for some utility in the term UPF, but that is not why it is there. I would not advise people to look for sell-by dates on things to decide whether or not they eat something.

Dr Chris van Tulleken: A good rule is that, if you are wondering, it probably is.

It is important to say that, when the Brazilians developed this definition, they had never encountered a Marks & Spencer lasagne or sausage. I use those examples because I eat them myself. The lasagne is not technically ultra-processed—if we had a well-stocked larder, we would all have all the ingredients in our kitchen. Yet do I think that the soft, salty, sugary, calorie-dense M&S lasagne is completely harmless because it does not fall into the technical ultra-processed category? Absolutely not. I would subject it to regulations, using our own dietary guidelines.

The M&S sausage has one ingredient, dextrose, of which it has a very small amount because it is in the breadcrumb. M&S sausages are no worse or better than any other sausages. If you took the dextrose out, and took them from the ultra-processed category into the non-ultra-processed category, do they magically become healthy? Absolutely not. They will still be full of saturated fat, sugar and salt, and they will be extremely calorie-dense. For an adult, the recommended portion of an M&S sausage is one, and they are about the size of my finger.

Henry Dimbleby: How often?

Dr Chris van Tulleken: One every ten minutes, if you are me.

There are loopholes with the definition of UPF, because the Brazilian team had not encountered the genius of the scientists at British food corporations in creating clean-label products that are still cleverly engineered to drive excess consumption and addiction.

Ultra-processed food is not a perfect definition; it needs real nuance when it comes to regulation. But it is a very powerful way of describing our terrible diet.

The Chair: I have the impression that you both feel that dietary pattern

is more important than any individual food and the quantities of different things that we eat. Is that impression correct?

Henry Dimbleby: Yes. People used to ask, with the food strategy, whether there is a simple answer. The simple answer is to make it easier for people to cook from scratch and eat lentils, but that is incredibly difficult to do. Basically, if people cooked from scratch and ate loads of veg, a few more legumes and less meat, our diet, both environmentally and health-wise, would be a million times better for us.

Dr Chris van Tulleken: As a scientist, asking whether broccoli is better or worse than a burger is an impossible question. It is a boring question, because there is no way of testing it. It is a bad question, because what we mean by “healthy” is impossible to know. If you are going to live on a desert island, you should definitely take burgers; if you can only bring one, bring the burgers not the broccoli—you will not live long on broccoli. Yet we know that broccoli, as part of a dietary pattern, is an incredibly health-giving food. If people eat lots of different foods, that is good for us, so the dietary pattern is the thing of interest.

Q14 **Baroness Boycott:** How do you tell the difference between UPF and HFSS? What is it about the UPF name that somehow cuts through, so that people are really worried about it, whereas HFSS has rumbled along in the background for a really long time?

Dr Chris van Tulleken: It is a very good question. Part of the problem with HFSS is that you would need to explain what you mean by HFSS.

We have three definitions in the UK.

Definition 1. We could use our dietary recommendations, which are extremely good and well-evidenced, and they describe appropriate maximum recommended intakes for calories, fat, salt, saturated fat and free sugar. But that is not what HFSS generally means in the press.

Definition 2. When people say HFSS, they are talking about an equation called the nutrient profile model, developed in 2004-05. It is a regulatory definition used by Ofcom to determine marketing of foods to children. It is a complex equation, in which you calculate points for the energy saturated fat sugars and sodium and subtract points calculated for fruit, vegetable and nut content as well as for fibre and protein.

Depending on the number of points there are three different calculations used to determine whether a food will be called HFSS for the purposes of Ofcom. So you can have foods that are quite high in nutrients of concern—saturated fat, salt and free sugar—but which are diluted, essentially, with protein, fruit or vegetables.

Baroness Boycott: Give me an example of food for children that is HFSS.

Dr Chris van Tulleken: I have a bottle of Coca-Cola here. That would be an HFSS food. It is very high in sugar and it has no redeeming features beyond some water—I think even the manufacturers would agree that.

The Nutrient Profile Model used by Ofcom is a complex, subjective definition of food. It is not a simple formula. It applies only to particular categories—it does not apply to bread, for example, as far as I am aware. There is no study that I can find linking that Ofcom regulatory definition to negative health outcomes.

In order to use the equation, you have to have access to proprietary databases. You cannot easily work from a research perspective and the information is opaque to the public: there is no list of HFSS products that you can access as a member of the public. We do not have any big studies linking that category of Ofcom HFSS products to negative health outcomes, and we do not know the overlap with ultra-processed foods.

We then have the third definition of HFSS in this country, which is traffic lights. These are voluntary, and companies put them on their products. The Coca-Cola Company has voluntarily put traffic lights on Coke. There is a traffic light for fat, saturated fat, sugar and salt, and Coke gets three greens and just one red. Traffic lights are voluntarily adopted, and they are, essentially, a marketing tool for Coca-Cola.

Those are the three different definitions of high fat, salt and sugar. We know that there is very good overlap between ultra-processed food and using the definitions in our dietary recommendations. If we had a warning on food for every one of those nutrients of concern in our dietary recommendations—this is work I did yesterday, with colleagues at the Pan American Health Organization and at UCL—using just calories, fat, salt and sugar according to our dietary recommendations, which are very good, more than 97% of ultra-processed foods would get a warning label. There is great coherence between the best evidence we use in this country and ultra-processed foods. They describe a very similar category.

Baroness Boycott: I am still not quite clear what the difference is. Is ultra-processed food also HFSS?

Dr Chris van Tulleken: The difference is a definitional one. HFSS, as used commonly in the press, is an equation used by Ofcom that adds up fat, salt and sugar; you get points for them and points taken away for nuts, wholefood, fibre and protein. You then apply it to particular categories of food. That is one definition, and ultra-processed food is another definition.

We do not know the overlap between those definitions. However, instead of worrying about that very complex Ofcom definition—which was developed in good faith by absolute experts; I am not criticising it, but it is very complicated compared to UPF—if we just used our thresholds for fat, salt, sugar and saturated fat, and calories, from our national dietary recommendations, we would be limiting ultra-processed foods.

One of the harms of UPF is that it is generally high in fat, salt and sugar. This is the really important nuance, and Henry and I have spent a long time talking about this. We have had salt on the table in abundance for a very long time, and people do not seem to use too much of it. The difficulty is when you have a high level of salt in a food that is engineered to make you eat more of it. That is the crucial quality of ultra-processed food.

I have spoken to product development teams at our major supermarkets, at Danone, at Unilever, at many other food companies, and the scientists in the food companies are all absolutely clear—some in public, others behind closed doors, but they are on the record, in my book—that they deliberately engineer this food to make you eat more of it. This is not a secret. It is because the purpose of the food is to make money for the owners of the food companies. It is not a conspiracy; it is just the way food companies work.

Q15 **Baroness Boycott:** Henry, how can we harness the current unease and upset about UPF to effect a change? Is it through labelling?

Henry Dimbleby: I agree with all of that. There are two fundamental differences between UPF and HFSS—high in fat, salt and sugar. The second difference is the way we harness it, as you mentioned in your first question. The first difference is mechanism. With HFSS, they are taking a mechanism of what we know about macronutrients and how those make us sick and try to stop us eating basically sugar, salt and fat. With UPF, yes, the mechanism delivers a lot of sugar, salt and fat, but there is something in addition.

Kevin Hall did an ad libitum study where he got people to eat UPF and then got them to eat food cooked from scratch with similar macronutrient profiles. They ate much more UPF, and they put on a kilo eating UPF over, I think, four weeks. He is working on this at the moment, and he hypothesises that, in addition to the sugar, salt and fat, there is softness, mouthfeel—the extraordinary softness that emulsifiers bring, which makes us eat more—and hyperpalatability, with a ratio of fat to sugar that we do not typically find in food we cook from scratch.

There is a lack of water, because water comes out during the processing, which leads to an energy density that is not normally in foods cooked from scratch. There is a lack of insoluble fibre, because it tends to get taken out. He says that there might be other mechanisms. Take a clove of garlic, for example. The USDA recognises 67 chemicals in there, but there are actually 2,300 or so chemicals in a clove of garlic, and there may well be all sorts of other much more complicated effects in the way those react with the microbiome et cetera that we do not know about.

So there is that causal mechanistic difference. The problem is how we might undo it. One way of undoing it is to say, “Could we make UPF but in a way that is not harmful?” Could we construct processed foods with the benefits of time and labour saving and all of that in a way that is not harmful? Kevin thinks that the problem with that is that it is likely that

the mechanisms used currently to make UPF are intrinsically linked to the success of the products. You could make UPF food that does not have any of those mechanisms, but no one would want to buy it because it would be too expensive or just not very delicious.

The flipside, I think, if we say that we are not going to have UPF, is that food companies would very quickly find clean-label ways of getting us to eat lots of food that is not good for us—take the M&S lasagne example.

Baroness Boycott: They would not change the food, but they would relabel it?

Henry Dimbleby: They would do a lot of work creating stuff from ingredients that we know but that is just delicious.

Dr Chris van Tulleken: This is what Henry does when you have dinner at his house. You find you have eaten an enormous quantity of non-UPF.

Henry Dimbleby: On the lasagne thing, Rachel Griffith, from the Institute for Fiscal Studies, did a study looking at the relative cost of UPF versus cooking from scratch. If you include time, it is more expensive to cook from scratch and it is very efficient to make stuff in a factory. That means that it is incredibly hard work to make a trifle or a lasagne. That might be another factor: there are things that, if you cook them from scratch, it is really hard to make them delicious. There are different mechanisms at play, and you could try to change things and not get the right answer.

Where do I think UPF can be valuable? This comes back to the framing and the fundamental truth that it reveals, and the reason why Chris's book cut through—the stories about food companies going up the Amazon and seeding villages with ultra-processed food, completely changing people's diets and making them sick. It is fundamentally the profit motive that is causing the problem. There are lots of things that we could do to reduce the attractiveness of these products to companies; you could have a salt and sugar tax, you could restrict advertising.

Baroness Boycott: We will come to that.

Henry Dimbleby: That is why this is so interesting: fundamentally, it has made people go, "Okay, so it's not just a bit of fun".

The Chair: Thank you. Lord Brooke would like to probe this a little further.

Q16 **Lord Brooke of Alverthorpe:** Picking up on Chris's comment on the wide range of ingredients we see on labels, can I take it, then, that there is a very substantial overlap between HFSS and ultra-processed food? Is that what you are saying? That it is not minimal.

Dr Chris van Tulleken: It depends. I am immersed at the moment in very technical discussions about what exactly HFSS is. We do not have a definitive list of the food determined to be HFSS by Ofcom so we can't

work out the overlap but I suspect there would be an overlap of some 80% to 90%. In general, ultra-processed foods are high in saturated fat, fat, salt and sugar. So yes.

The question that derives from the UPF research is, as Henry says, whether you can make healthy UPF. If we stripped out the salt, the sugar and the fat, would it become healthier?

Lord Brooke of Alverthorpe: Could you replace some of those ingredients with healthier alternatives?

Dr Chris van Tulleken: You absolutely can. You can replace sugar with non-nutritive sweeteners, and fat with modified starches. You can create zero calorie foods. Part of the problem is whether you can then sell them. The answer seems to be not generally.

The other question is whether the health effects would remain. In almost all the big prospective studies, we see that nutrient profile is adjusted for. So the question the study is trying to answer is: is this food merely high in fat, salt and sugar? We see in most of the models—this is work done by my PhD student Sam Dicken at UCL—that when you adjust for salt, fat and sugar, the negative health effects not only remain the same in terms of statistical significance; they seem to remain the same in terms of magnitude.

That does not mean we need to throw out all nutritional knowledge. There is no question that fat, salt and sugar are nutrients of concern, but there is something about the processing—the softness, the energy density, some of the additives, the marketing—that drives this excess consumption and other health harms. So I do not believe that we can simply reformulate our products to solve the crisis. The evidence is strong on that.

Henry Dimbleby: The other way, by the way, in which they might be very different, and we are only just beginning to understand this, is the garlic example I gave. A physicist called Albert-László Barabási became famous as a network physicist looking at why the internet was so fragile, and a lot of money has since been spent, thanks to his work, to make the internet less fragile. He has looked at the micronutrients in ultra-processed food, and his research shows that an ultra-processed lasagne and a lasagne you make at home look very different when you get down below the level. We are in the foothills of that science, but that is one way in which these foods seem to be very different. But we do not yet know what that means causally.

The Chair: Thank you. That is very interesting.

Q17 **Lord Krebs:** I need to declare some interests. I led the FSA when the nutrient profiling model was developed, so I am *parti pris* on that perhaps.

I also chair the World Cancer Research Fund's global panel on cancer, diet, lifestyle and cancer risk, and in that context I was interested in you

both saying that what really counts when looking at health risks is dietary pattern, because the WCRF analyses cancer risk in relation to dietary patterns—the Mediterranean diet, the western diet, the DASH diet, and so on—rather than individual components. I would like you to reiterate that, if that is what you agree with.

My third conflict of interest, since M&S has been mentioned, is that I am a scientific adviser to it.

Dr Chris van Tulleken: We could have discussed Morrisons—

Henry Dimbleby: Is he allowed? You will have to take him off the panel.

Dr Chris van Tulleken: The Morrisons, Tesco, Sainsbury's and Waitrose lasagnes are all also clean-label UPF, in my view.

Lord Krebs: However, to come back to what I wanted to ask you about, I think in a way you have sort of answered this. Chris, you have talked about a mass of evidence that UPF has associated health risks, and at the same time you have said that, depending on which definition of HFSS you use, there is either a 98% overlap or an 80% to 90% overlap between UPF and HFSS. When one digs deep into the epidemiological data, how does one tease out the effect of UPF on top of the effects of HFSS? If there is an effect—if I think of the Bradford Hill formula for drawing causality inferences—what is the mechanism?

Dr Chris van Tulleken: First, I absolutely stand by the thing of interest being the dietary pattern. In the UK, our dietary pattern is ultra-processed. On average, in this country, 57% of your calories are from ultra-processed food, and it is very normal to eat 80%. So dietary pattern is a thing of interest.

Digging into the epidemiological data is a nightmare of sub-group analysis, and you understand this very well, I think. It is impossible to disentangle groups, and sub-group analysis is always a problem. So if the question of interest is how much is processing and how much is fat, salt and sugar, in a sense they are two sides of the same coin, - high levels of fat salt and sugar are part of ultra-processing and ultra-processing drives consumption of fat salt and sugar.

Let me put it this way. Henry knows this very well. If I got a block of fat—lard—a bowl of sugar and a bowl of salt and just mixed them up and served them to you, no one would want to eat them. We could fiddle around with the levels, but you still would not want to eat them. There is much more to food than levels of those nutrients and deficiency in beneficial nutrients. So in order to make it palatable you have to process it. You can process it, as Henry does, with love and expertise. Parents do this. My mother is sitting here. She is an expert food processor. She makes the best food I have ever eaten, but she does not do it to drive excess consumption, so you feel satisfied, and in the van Tulleken household you are not forced to eat.

The purpose of ultra-processed food is to drive excess consumption, so everything that is done to our food is about that. Every product, whether it is a can of cola or a lasagne, has thousands of properties. It has the shear forces used to deconstruct it in your mouth: it has viscosity, oiliness, granularity, pH levels, bitterness levels, ratios of everything. It has thousands of properties, including the packet, the font on the packet, the monkey on the packet, the ad, the music. All of that is ultra-processing, and every property is optimised to drive this excess consumption.

Is the problem the high level of salt in the food or that you eat three portions of a moderate level of salt? Is it the sugar and fat, or is it the ratio between them creating a specific mouthfeel? It is impossible to disentangle all that, looking at the epidemiological data.

In terms of Bradford Hill, if the question is whether we think that, as a category of food, ultra-processed food causes negative health outcomes, I think we have satisfied the Bradford Hill criteria. I am an author on a three-part series of *Lancet* papers that will be published later this year where I think we demonstrate that quite effectively. We have strong, consistent, graded, plausible, experimentally based associations showing causality.

If you ask whether a particular bread is causing inflammatory bowel disease, we cannot do that. If we look at the epi-evidence, we do not have just one or two studies; we have multiple meta-analyses. We have around 80 prospective cohort studies now. We have one randomised clinical trial, which was pretty expertly done. We never had that with tobacco, and we would all agree that we have proved that cigarettes cause lung cancer.

When we look at the experimental evidence, it is not just Kevin Hall's randomised controlled trial. The evidence from pre-clinical trials dating back to the 1990s on softness and energy density, the human data, is incredibly robust. The evidence on fat, salt and sugar, which is a component of ultra-processed food, is incredibly strong. The evidence on some of the additives—non-nutritive sweeteners and emulsifiers—is concerning. If you asked whether I can definitely prove that emulsifiers are definitely causing cancer or cardiovascular disease, the answer is no, I cannot, but the burden of proof is not on me. I have a lot of good evidence in rodents, some evidence in people and some very big population data, so if emulsifiers were a drug, they would not get to the phase 3 trial. We would not be trying them in humans; they would have failed the rodent test at the dosage we are now using them.

The threshold for whether we use some of these additives should be much higher. When we take a drug when we are ill, we are already at risk, so we are prepared to accept some harms and side-effects to get benefits. Synthetic emulsifiers are completely unnecessary in food, so if they cause any harm, or if there is any suspicion of harm, especially in combination with other things, they should be subject to really stringent regulations.

On that big question, I think I could make a very persuasive case that we have reached causality.

Henry Dimbleby: One of the things that is an absolute scandal is that, years afterwards, we are all here talking about Kevin Hall's study. If you speak to Kevin Hall, he will say that the difficulty is that it is very hard to get volunteers to be locked up for four years and to eat food ad libitum. However, given the harms that our diet is causing us, we should be doing many more of these studies.

I have been lobbying UKRI and the DHSC pretty trenchantly over the last few months that we should have a national programme where we take an institute every year during the summer holidays, when we will have student volunteers and other kinds of volunteers. Participants will be in that location, there will be a restaurant there and all sorts of ways in which we can study food, measure hormones, et cetera, and, every year, people should be able to bid to have ad libitum experiments conducted in that environment. We would very quickly be able to get hypotheses and answers to some of these questions.

I just find it strange how UKRI and most medical funds operate. Kevin has been trying for years to get the next version of the study done. It strikes me that this kills almost as many people every year as Covid did in its peak death year. We saw the degree to which we completely changed the rules of medical research for Covid. With this, we are doing nothing. We are just sitting back and not doing any research on this critical point that we do not understand.

Dr Chris van Tulleken: That is incredibly important. We need to do more research, absolutely. However, we are in a moment where whether you believe the evidence on ultra-processed food is sort of irrelevant, because the regulatory tool, in my view, should be fat, salt, sugar and calories. We all agree on that, and we know that there is this catastrophic tragedy that we have been living with for two or three decades. We should definitely do more research, but we do not need to wait for more research before we act. Nor do we need to believe the evidence on UPF. Almost all the doubt, the anxiety and the uncertainty—we have quite a lot of data on this—comes from industry-funded voices.

Take the concerns of the British Nutrition Foundation. The British Nutrition Foundation's Healthy Eating Week last year was funded by Coca-Cola; it is majority funded by companies that profit from ultra-processed food. The press conference convened by the Science Media Centre fronted five scientists calling into question the evidence on ultra-processed food. Four out of five had current or past links with ultra-processed food manufacturers. Take the university departments that speak out against me and attack me constantly. When we do Freedom of information requests on the human nutrition department at Reading, it turns out that it receives funding from Pepsi and Mars.

This debate is exactly parallel with what the tobacco industry did in the 1950s, the 1960s and the 1970s. Doubt is their product. Independent

scientists—the team of authors who are writing for the *Lancet*, world-class professors at Harvard, Yale, Princeton, Cambridge, the best institutions in the world—are not funded by the food industry and are very coherent on this evidence. UNICEF, on the evidence, does not accept any money for any programme from anyone who makes any ultra-processed food. The Governments of France, Belgium, Israel, Canada, Brazil, Argentina, Mexico—I can go on—accept a causal link.

There is a very clear divide. The people who are hesitating are, almost universally, funded by industry. There is certainly a lot of confusion and discussion, and we are not sure about all the mechanisms, but I do not know anyone credible who is completely independent who really questions the big picture that ultra-processed food causes negative health outcomes as a dietary pattern.

Lord Krebs: I should probably not ask questions, since I am conflicted.

Dr Chris van Tulleken: No, your question is very important to me.

Q18 **Lord Krebs:** I just want to make one observation and ask you a further question. Kevin Hall's study is cited a lot, but we all recognise that it is flawed, because the diets of the ultra-processed and the non-processed treatments were not matched, as he says clearly in his paper, for added sugar, for insoluble fibre, for saturated fat, et cetera. So it was a start, but it is not the answer.

If things like emulsifiers and stabilisers are harmful, does that mean that the regulator is falling down on the job? We will take evidence from the regulator later on.

Dr Chris van Tulleken: I am very conscious that I am speaking to you as a former chair of the FSA. Henry and I know Kevin Hall, and he is arguably the pre-eminent scientist in the world doing this kind of work. You can go toe to toe with Kevin on any of the details. It was broadly an excellent study. On added sugar, the free sugars were matched, the fibre was matched, and there are good reasons why he did not do pizza versus pizza. But, if the Kevin Hall study turned out to be completely fraudulent, if it turned out that Kevin had made the whole thing up and we had to retract it, it would not change the big picture on ultra-processed food one bit. It is one paper in well over a thousand that contribute to a big body of evidence.

Regulators are in an invidious position when it comes to food additives. We are very good at assessing reproductive toxicity, general toxicity, carcinogenicity. What is really hard is to assess long-term effects on mood, weight, the microbiome. We do not have any assays for those whatever. That is why I think regulators could adopt a more precautionary threshold. I am talking with people at the FSA at the moment about the evidence on emulsifiers, for example, and I think we should accept a much lower threshold of pre-clinical evidence. If it is failing the test in rats and it is not essential in food, why would we put it in there?

We have pretty good studies published in *Nature* and *Science* by brilliant groups. We have human and rodent data on polysorbate-80 and carboxymethyl cellulose showing very plausible evidence of concern. Then we have the link to big population datasets coming out of the University of Paris and the epidemiological group there linking it to cardiovascular risk and cancer, and we have a very plausible mechanism for how emulsifiers scrub out the gut, thin the mucus lining and drive inflammation. It all hangs together, and we are witnessing this catastrophe of cancer in the young and cardiovascular disease unfold in front of us. I just do not know why we would still have these things in the food supply when they are not essential.

Q19 Lord Brooke of Alverthorpe: I declare my interests as shown on the website. I have a particular interest in healthier, natural alternatives to sugar in use.

To a degree, you have already been answering my question, but I am sure you have more to add. How influential is the food industry in driving poor health outcomes and in the wider policy-making process? What is the role and responsibility of the food industry in tackling obesity, if indeed it has any?

Henry Dimbleby: Shall I start, and then Chris can—

Dr Chris van Tulleken: Agree with you.

Henry Dimbleby: —deliver the coup de grâce? First, it is important to understand where we have come from. One way of thinking about ultra-processed food is that after the Second World War we created a new form of farming that meant that the cheapest forms of calories were refined vegetable oil, refined wheat and refined sugar. Chris alluded to this: we can see ultra-processed food as a way of taking those cheap calories and making it palatable by adding as little other food as possible. In some senses, that was a huge success: we do not have the malnutrition that that form of farming was invented to stop. We have solved the calorie problem.

When you talk to older people in the food industry, they kind of think, “How did I become the bad guy? I was the hero through the 1940s, 1950s and 1960s. We were the heroes. We solved this existential problem, and now we’re the bad guys”. But it is impossible not to draw the conclusion that the way in which that has developed is now causing huge harms. Basically, there is very little that a big company can do to do anything better, whether on the environment or on health, if it significantly changes its bottom line. Unilateral action is almost impossible. You would get fired as a CEO if you did that. That is why government is so important. Also, if Ferrero says that it is no longer going to sell Ferrero Rocher, Mondelēz will create something to replace it and the world will not get any better; it will just be someone else making the money.

On your question about how they are involved in the policy-making process, the ways in which they influence the policy-making process are

on a spectrum. At the most extreme side, you have groups whose literal job is to be paid to resist any form of policy interference. That might be a group like the Institute of Economic Affairs, the IEA, but it might be groups that in other ways do really good, benign things. The Food and Drink Federation, for example, was critical to keeping our food supply moving during Covid. It did some amazing things, but at the same time the job description of its CEO, Karen Betts, literally does not allow her to say that this is a problem.

When I was in the Department for Environment, Food and Rural Affairs, I would sit in meetings with the Secretary of State and the food companies and they would go, "Yes, we understand there's a problem, but that's difficult and that's difficult". At one point, there is direct opposition, saying, "This is nonsense", but at the next level up there is throwing just a bit of grit in the wheels. This is a hard area to make policy in. It is not going to win you many voters. A lot of your own party is against it. So if you throw enough grit into the wheels, you slow everything down.

We know from the work of Dolly van Tulleken, née Theis, that we have had 689 interventions on diet, all of which have been almost completely toothless because you get this resistance. You get the occasional person coming out and saying something. Roger Whiteside, who was the CEO of Greggs, came out and said, "We need more regulation. I can't do this on my own". James Mayer, currently at Danone, has said that. So there are individuals who are beginning to say publicly, "I can't do this", but basically the role of food companies in policy creation has been to try to throw shade to make it very difficult to create policy.

The role of the food industry in tackling obesity should, at a minimum, be to try to stand back and not lean into the Minister's ears and make the excuse. That is the moral thing to do. They should look at their children and not do that. If they are brave, they should, like James Mayer, Roger Whiteside and others, say, "We want more regulation". The CEO of Sainsbury's hinted at it recently. He might get fired for that, so it is complicated. At a minimum, they should not say no, and if they can, they should say that we need more regulation. I do not think they really can do anything other than that.

Coco Pops is breakfast cereal that is pudding marketed at children's eye level. You might get a movement of young marketers. There is a movement of software engineers now who are signing a pledge—a bit like a Hippocratic oath—saying, "We will not design software that is addictive for children". There is a kind of upspringing. You might see food companies unable to find young advertisers and marketers to do that role. When you talk about industry, maybe the younger generation of industry can be a positive force on this, from the bottom up.

Dr Chris van Tulleken: If you go to the homepage of any of the 15 to 20 transnational food corporations that feed us, you will see an entity that looks much more like an NGO dedicated to plastic clean-up, ending child-labour practices, protecting public health and reducing carbon emissions.

The last piece of research I published was done largely with economists, not with nutritionists, and we decided to test this hypothesis. We looked at their own financial data and asked whether, when they make money, they spend it on reducing plastic pollution or improving biodiversity, or do they spend it on share buybacks, paying out dividends and voting down public health proposals when they are put to the board?

The answer is obviously the latter. The system is financialised and the company's hands are tied. We have seen several big companies at CEO and board level trying to make changes. The CEO of Danone, Emmanuel Faber, was removed by activist investors when he tried to improve the product portfolio. An analyst at BlackRock explained this to me in the simplest terms: the companies are not in control of their business model. They are obliged to institution investors who hold all our pensions, so they are unable to change. They would like to behave in a moral way; I have dear friends who work in the food industry, and I speak to the food industry the whole time and they are all decent, honest people, but because of the way the system works they have to sell harmful, addictive food, because that is how they make their money.

We published the paper not to throw rocks at industry but to make the most compelling argument we can that they cannot control themselves and we need government intervention. To make an argument that the intervention has to be regulatory, my sister-in-law, Dolly van Tulleken, neé Theis, sitting behind me, sent me information the other day looking back to 2004—20 years ago. In the policies that were being written at the time, there was a deliberate plan to partner with industry when it comes to public health policy.

We are absolutely certain that, if we are writing public health policy, we cannot take money from the people who are causing the public health problem. You cannot simultaneously profit from a problem and solve it. It cannot be done. We know this, because in the history of all industrial regulation there has never been an industry that has successfully self-regulated. That is not a neo-Marxist, anti-industry agenda. I am pro-Britain plc, and I would love a big, healthy thriving food industry paying loads of tax and supporting the NHS. That is absolutely compatible with stringent regulation. Look at pharma, aviation, and even tobacco—if you had bought a share in Philip Morris in the early 1990s, you would be absolutely fine now.

Companies in industrial sectors survive regulation very well. The banks collapsed in 2008 because of a lack of regulation. Since we brought in regulation, the banks seem to be doing just fine. We can be pro industry, pro growth, pro the economy and pro public health, but we need an arm's-length relationship. The most important thing is that industry money is dirty money. The British Heart Foundation does not take money from Philip Morris or BAT.

The Chair: Thank you. So a level playing field in regulation would be most acceptable. Two Members have supplementary questions which they will ask one after the other.

Q20 Baroness Browning: We have heard succinctly from both our speakers that the food industry does drive—I use the word “drive” deliberately—poor health outcomes, but we spend a lot of time talking about supermarkets. Could you say a bit more about the other side of the food industry: the catering and fast-food sectors? It seems that more and more people are having fast food delivered to their door, and you regularly see people having two of their main meals on the train, on their daily commute.

Chris, in your opening remarks you mentioned stunted growth in children in the UK compared with northern European and Scandinavian countries. As far as the fast-food sector is concerned, are other countries doing things differently to us? Are they already regulating? Are these transnational companies, which you see everywhere throughout the world, doing different things in different countries? If they are, how are these other countries getting them to change their behaviour?

Q21 The Earl of Caithness: I have no interests to declare. One of the arguments used by the Government for making very little progress in this area is that the food industry is so diverse and diffuse. Clearly it is not, because both of you have been talking about the limited number of transnational food companies. Is it as diffuse as the Government say it is, or is it really a problem of tackling the 20 or so big companies and bringing them into a better position to stop them poisoning us?

Dr Chris van Tulleken: There is enormous consolidation in the food supply. At producer level, somewhere between 50% to 90% of global grain trade goes through four to six companies. At the processing level, the companies that make probably the majority of the calories we eat—I do not know whether you have a stat for this, but there are something like 15 or 20 companies making more than 50% of the calories we eat—can do this only by ultra-processing.

The logic of ultra-processing is to grow commodity crops such as corn, rice, wheat, soy, palm, a bit of dairy, and three meats—it is nine to 10 species, really—at vast scale, and often for animal feed, and humans take the leftover waste. The crops are broken down into fat, protein and starch sugar, which creates pastes and powders with nearly infinite shelf life that can be reassembled into these addictive products.

So, yes, there are a small number of companies that are being favoured at the subsidy level and then at the regulatory level. One benefit of regulation that we might see is the flourishing of small and medium-sized food producers, small farms, and more local and British food. So even if the big food companies took a hit, which is a bit unlikely, we would see other companies rising up.

Henry Dimbleby: I will take the question about other countries. This comes back to what I was saying at the beginning about how bad it is getting. The countries that deal with the difficult things are the ones where there are existential concerns related to the issue. There are a lot of luxury beliefs in the food industry, but the idea that free-market libertarianism is a luxury belief with no adjustment for externalities such

as the problems the market causes—that we have a society that is rich enough to ignore what is fundamentally happening to us—is beginning not to be the case.

There are three countries that have most notably tried to deal with this problem. South Korea sits next to a nuclear power and the health of its population is critical to it. Singapore, on the production side, is trying to produce 30% of its calories by 2030, and, on the health side, as a small island that does not grow its own food it takes it very seriously. Japan has a history, both at the end of the 19th century and after the war, of seeing population health as being critical.

Those countries—we may come on to this when we talk about policies—have done all sorts of different things to try to boost the consumption of traditional diets and suppress the emergence of the American diet by trying to creating a culture and through planning permissions, et cetera. They are the only three countries in the developed world, as far as I am aware, that have not seen an obesity epidemic as wealth has increased.

I do think we are now getting to the point where we will not be able to have this luxury of belief, so we may get a similar intervention in this country, because the combination of the NHS, personal health and productivity will just be disastrous for us. But it has needed to get to here for people to take it seriously.

The Chair: Baroness Pitkeathley and Baroness Ritchie are both interested in the final question, so perhaps Baroness Pitkeathley could start us off.

Q22 **Baroness Pitkeathley:** In the interests of time, this was my question. How effective have government obesity policies been? I think our witnesses have said, “Not very”, so with your permission, Chair, we can move straight on to Baroness Ritchie’s question.

Q23 **Baroness Ritchie of Downpatrick:** I apologise for going out in the middle of your presentations, but I had a Question in the Chamber. Obviously, we want to concentrate on the Government’s policies and how effective they are. You have already alluded to their ineffectiveness. What should the characteristics of future government policies be if they are to be implemented successfully and be effective, considering that we will probably have a new Government within the next 12 months? If you were advising them, what would you say to them?

Henry Dimbleby: The first thing to recognise, on policy, is that this is a complex system. It is genuinely unknowable how the system will respond to policy interventions. Again, one of the things that people say in looking at policy interventions is, “There’s no evidence to prove that”, or whatever. You just do not know. You cannot trial these things, so you have to act. But you also have to be honest enough when an action causes a weird, ineffective or actively unintended consequence, which it may well do and which you then have to change. We all have to be honest with ourselves that no one has the answer.

I will group my interventions into the three things that we know need to happen. I will then give some specific policies that are probably the best bet when it comes to what I would do first, knowing that they might create unintended consequences.

In the three categories, first, clearly you have to break that junk food cycle and restrict companies' commercial incentives; there is no version of the future that looks good if that does not happen. Next, you have to support the diets of those in poverty. All these harms, although spread across society, are concentrated in a horrible way if you live in poverty, and until we solve inequality, which I am not sure we are going to do anytime soon, we have to try to relieve that specifically. Thirdly, because this is a complicated, long-term problem—a bit like climate change—you have to bring it above the political level by creating some structural mechanisms that mean that you do not have to have a particular Health Secretary who is particularly good and cares about this in order to make progress continue.

Against those three categories, what things would I do first? On breaking the junk food cycle and commercial incentives, I would immediately restrict advertising. The Government said they would do that, but they pushed it back to 2025. I would restrict the advertising of all this food, and not just after the watershed. I would say, "You can't advertise it". It would be completely reasonable to do that, I think. Take someone like John Hegarty, who is one of our great kings of advertising. He says, "Advertising agencies always complain that, if you restrict advertising, you'll get no children's programmes and the advertising industry will be destroyed, but people find stuff to sell. They'll just find something that's a bit less harmful to sell". That is one thing: stop the marketing of it.

The second thing I would do goes to Chris's point—I did not recommend it, but I have really come round to it—about putting great big black octagons on stuff that is both UPF and HFSS, so that it is not Tony the Tiger looking at you but a big black thing saying, "There is no doubt that we think this stuff is going to do you harm".

There you go. Are those South American Oreos?

Dr Chris van Tulleken: These are Colombian sweets. They say, super clear, "Werther's Columbia", but who knows where they are from?

Henry Dimbleby: The third thing I would do would be very difficult to do now, politically speaking. We did a lot of focus groups on this and we think it is possible to do it. We got the people who do the Tories' focus groups and polling to do the work on this, because we did not want them to think that we had got in someone who believes in some kind of left-wing mission. You could put in place a salt and sugar reformulation tax. It would not put the price of food up. It would lead to some reformulation. In a cost of living crisis, it is politically very difficult, so you would have to wait for the economy to recover a bit and then you would do it.

On supporting the diets of those living in poverty, the cut-off for free school meals—they come with holiday support, Healthy Start, early years vouchers and stuff—is way too low. It is £7,400 of pre-benefit household income. It has been the same for ages and has not changed. In my view, free school meals should be available to everyone. If you had universal free school meals, it would create a cultural change in schools. We do not make children buy their own books and they do not have to pay by the lesson.

I think the culture change would come from doing that universally, but, at a minimum, doing it for everyone on universal credit. There is something called the Community Eatwell programme, and the Alexandra Rose Charity is doing extraordinary work trialling this at the moment by giving vouchers for fruit and vegetables to those living in poverty. It is extraordinary that, ideologically, some of the left do not like it, because they think it is demeaning to give people vouchers rather than money, and the right do not like it because it is more support. Actually, the people who get it absolutely love it, because there is something about being given fruit and a fruit bowl. They say, “I can put a fruit bowl on the table for my children without looking at it and thinking I’ve wasted money”. When you consider the number of children in those families in that trial eating their five a day going from 5% to 64%, and adults sleeping better, I would do that in-kind direct support tomorrow.

Finally, on the structural stuff, I would do two things. We do not have a statutory target for health outcomes in the way we have them for biodiversity and carbon. I would put a statutory target in place, because it means that the Government have to report against it. I would ask the FSA to do a full report on food, and for the Office for Environmental Protection and the Climate Change Committee to report against the statutory targets that are relevant for food, in the way the Stern report suggested. It is a fantastic mechanism for keeping this front of mind and making it important.

I would also have mandatory reporting, which was recommended in the food strategy. Make food companies tell us what they are selling to people. Data transparency is a critical part of the solution. People might say that it is very complicated and difficult, but being able to see at least who is selling what, and where in the country, would be a huge advance.

Dr Chris van Tulleken: What is lovely is that we have not had to discuss personal responsibility at all today. That argument is morally, economically, socially, politically and scientifically dead and buried, and so a characteristic of all good policies must be to entirely remove the idea of personal responsibility from the table. They must be kind, they must draw on the lived experience of affected people and, most importantly, they have to adopt a regulatory position. They have to be free of industry influence. You have to speak to food companies; you have to understand them. I spend a lot of my time talking to food companies and I never take a single, solitary penny. We have to learn the lessons of tobacco control. The ancestry of this food was tobacco. The biggest food

companies in the 1980s were owned by the biggest tobacco companies. They used their marketing techniques and their flavour molecules to make these kinds of products in front of us, so we have to take a tobacco-control approach.

I have two specific asks with those characteristics in mind. The Government's Scientific Advisory Committee on Nutrition should be conflict-free within five years. I have spoken to people on this committee who say that it would diminish the talent pool. These are the same arguments we have used about people of colour, minority groups and women to exclude people from committees. There is a huge pool of independent talent that can be drawn on. That has to happen.

Secondly, I would apply black warning-label octagons to harmful foods, and I would use our own pre-existing dietary recommendations. If you did that, Coco Pops would get two big black octagons. Once you have food with octagons, everything else that Henry said flows under that: "These are the foods you can't make a health claim about. You can't say that they support your family's health". Coco Pops is not a food that we recommend according to our own dietary recommendations. Get rid of the health claims, get rid of Coco monkey, put it on a different shelf and do not advertise it to kids. The companies that make these products should not be able to advertise, because they are very good at advertising themselves without advertising the products, so it has to be a brand ban.

Octagon food is then the food that all the other policies apply to. It's the food that you then do not have in prisons, hospitals or schools. You cannot sell or market it to children. In South and Central America, we have good evidence now that the octagons are very well understood, particularly by people with low education or low income levels and that they are shifting purchasing not just to food with fewer octagons but to real food, and helping to re-embrace a traditional dietary pattern that everyone agrees is healthy.

We have other countries doing it, and we have a great evidence base. Exactly as Henry says, who knows what the unintended consequences are? You keep re-evaluating independently, go through the policy cycle and, if it is not working, you turn up the dials. You do not concern yourself with industrial profit. We cannot afford this situation. No matter how much tax it pays, it will not be enough to cover the costs of bad food to human health and the environment. And industry will be fine. We need proper regulation, just like we did with cigarettes.

The Chair: We have had an enormously interesting session this morning—a great deal of information, and lots of food for thought for the committee. Our staff have taken lots of notes. I thank both of you very much indeed and remind you that you will receive the transcript. If there is anything incorrect in there, please correct it and send it back so that we can publish it on our website. Thank you all very much.