



Food, Diet and Obesity Committee

Corrected oral evidence: Food, diet and obesity

Thursday 21 March 2024

11.15 am

Watch the meeting

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

Evidence Session No. 10

Heard in Public

Questions 123 - 140

Witnesses

[I](#): Professor Barry Smith, Director, Institute of Philosophy, University of London; Professor Franco Sassi, Chair in International Health Policy and Economics, Imperial College London; Dr Rob Ralston, Lecturer in Public Policy, University of Edinburgh

Examination of witnesses

Professor Barry Smith, Professor Franco Sassi and Dr Rob Ralston.

Q123 The Chair: Good morning and welcome back to this public meeting of the House of Lords Committee on Food, Diet and Obesity. We continue our meeting with the 10th evidence session of 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 in tackling obesity. We will hear now from Professor Barry Smith, director of the Institute of Philosophy at the School of Advanced Study at the University of London, and from Professor Franco Sassi, Professor of International Health Policy and Economics at Imperial College London. They are both joining us in person. You are very welcome. We are also joined by Dr Rob Ralston, lecturer in public policy at the University of Edinburgh, who is joining us remotely. You are very welcome, Dr Ralston. You are all very welcome and we look forward to your evidence today. I will ask you to introduce yourselves briefly the first time you speak before you answer the first question.

Today's meeting is being broadcast, and a written transcript will be sent to our witnesses to check for accuracy and subsequently published.

I refer to the list of members' interests, including my own, as published on the committee's website and as set out in the committee's first evidence session back on 8 February. I will also repeat very briefly what I said at the beginning of the earlier evidence session. While it would be inconsistent with Lords committee procedure to compel our witnesses to do so, we will, for the sake of transparency, be giving all our witnesses the opportunity voluntarily to declare any interest that they deem relevant to the work of the inquiry the first time they speak.

The first question is: what is the influence of the food industry on dietary trends and how is this influence exercised?

Professor Barry Smith: Thank you. I am director of the Institute of Philosophy, University of London. Although I am a philosopher, I also do sensory science, and I am talking to you in that capacity. I direct the Centre for the Study of the Senses, where I work with neuroscientists, psychologists and sensory scientists looking at taste, smell and the influence of the other senses on flavour perception. I work with chefs, artists and perfumers, but I have also consulted for the food industry for about 10 years. There are a lot of multinational companies in there, so rather than waste the committee's time I will provide you with a list of the people I have consulted for.¹ I also work with a non-profit organisation called Life Kitchen, which deals with people undergoing cancer treatment and the interruption to taste and smell. In that capacity, I have been consulting most recently for Holland and Barrett.

¹ Note from witness: I have consulted for Courvoisier, Diageo, Pernod Ricard, Häagen Dazs, Unilever, Kellogg, Coca Cola, Ferrero, Holland and Barrett.

Advances in food technology and design have led to the production and marketing of many food products, many of them with ultra-processed ingredients, that have set up dietary patterns in us which shape our food choice—our eating behaviour. That has led to overconsumption in many cases and it is correlated with high incidence of diet-related disease and obesity. Whether knowingly or not, I think these companies in the products they are making are targeting our wanting of foods. That tends to hijack the reward system that we have and interferes with our normal means of intake regulation.

On why it is wanting, we have to just set out the distinction between wanting and liking.² Normally, people think they are the same thing, but they are not. If all is going well, we want something because we like it, but that is not always why we want something. I think all of you will remember the first time you tasted coffee or alcohol. You did not like it but you kept having it, probably because the adults were having it, and eventually you had a post-ingestive effect. You liked the caffeine rush or the relaxing feel of the alcohol, and eventually you wanted these things a lot. What happens is that you transfer the liking to things that will predict that effect.

That wanting/liking difference is where we are with the food industry. A lot of the products they are creating are not being overconsumed because they are so delicious, desirable and pleasurable that people cannot help themselves eating it. It is much more that unconscious processes in what sets up patterns of wanting, continue to drive consumption in such a way that people know that they do not necessarily want to keep eating these things—they might not even eventually like eating them—but they feel compelled. Many of you will know that you finish eating all the greasy chips on the plate even though you are not really liking it anymore. You just feel compelled to do it.

One example of how that is done in a very heavy, industrialised way is fizzy cola. When you are drinking fizzy cola—Pepsi, Coca-Cola—you have it fizzy and ice cold. The contribution that those two properties make is to suppress sweetness and accentuate sourness and bitterness. When you let it go flat and warm, it is unpalatable; you do not want to drink it. So that is a very clever mechanism by which you ingest more sugar than you normally find palatable and then the body starts craving and expecting that amount of sugar. If that is happening a lot—and I think it is—we are seeing ways in which industrially designed foods are hijacking our normal mechanisms of intake regulation and reward, and that can have rather dangerous consequences.

² Note from witness: This distinction was introduced by physiologist Kent Berridge in his 'Liking' and 'Wanting' food rewards: Brain substrates and roles in eating disorders (2009)
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2717031/>

Q124 **The Chair:** Thank you. Dr Ralston, I will not leave you till the last just because you are online. Would you like to go next? Tell us a little more about yourself and then tell us what you think about the question.

Dr Rob Ralston: I am a lecturer in public policy. My disciplinary background is in political science. I have worked on various aspects of corporate political strategy, governance and policy-making. As part of that, I conducted research on public/private partnerships and voluntary regulation in UK food policy, and I have researched regulatory approaches to other commercial actors such as the tobacco industry. I have no competing interests to declare.

I guess I would understand influence both in economic and political terms. If we think economically in relation to the business models of many food companies, we have seen a global transition towards diets that are increasingly dominated by ultra-processed foods. Over the past four decades, the ultra-processed food industry has doubled in size, and it is now over \$1.1 trillion. In that industry, roughly eight key corporations hold central and dominant positions. They are consumer brands that we are all familiar with: Nestlé, Pepsi, Coca-Cola, Mondelez, Kraft Heinz and Danone.

On the influence of industry or why ultra-processed foods might be important in the portfolios of these companies, it is because they are very palatable, they have very long shelf lives, and they are highly marketable. We have seen multinational corporations devote huge sums of money to marketing ultra-processed foods. To give you an example, between 2015 and 2019, Nestlé devoted about \$100 billion just to marketing. The reason why it is doing this and why ultra-processed foods are so important to these companies is simply that higher profits come from processed foods in comparison to, say, fresh foods or whole foods. So it is often not in the interests of corporations to promote healthier food products, simply because the profit margins are lower and corporations have a fiduciary duty to shareholders to maximise profits. So, in some senses, the reason why ultra-processed foods are so important to these companies and why they have done so much to market them, with various adverse effects on health, is quite simple.

The other aspect—I am sure we will get on to issues of regulation—is that it is also important to think about the influence of food industry actors in politics and to think of them as political actors. In that sense, although the food industry is very complex, when it comes to the actors involved in policy-making or political processes, it tends to be large multinational companies and the trade associations that represent them. These organisations can devote very significant resources to lobbying, to public relations campaigns and to being involved in various types of partnerships and voluntary or self-regulatory schemes.

I am very happy to discuss this further, but I see the influence in both political and economic terms.

The Chair: Thank you.

Professor Franco Sassi: I am the director of the Centre for Health Economics and Policy Innovation at Imperial College Business School. Much of its research agenda is focused on food and obesity. A lot of our projects are in that area. I have no conflict of interest to declare. We are not seeking or receiving funding from industry, but I do work a lot with national Governments and international organisations such as the World Health Organization.

I am an economist, so my background is different from those of the previous speakers. I tend to look at problems from an economic perspective. I emphasise that when we say “the food industry” we are talking not about one industry but about a complex system that includes multiple diverse industries. There are at least four different industries at play here: the primary production industry, effectively the agricultural industry; the food manufacturing industry; the food retail industry; and the out-of-home food industry. They are different in their characteristics and their influence. They all influence our diet in a profound way but through different pathways.

The food market is a market. From an economic perspective, a market operates through a demand and a supply side, which interact in the marketplace. All the changes we have seen are the result of pressures on both sides. Industry has been responding in some instances to consumer pressures, but the response from industry has been producing major unwarranted effects, particularly detrimental health and environmental impacts. We should never forget that food production and consumption are major contributors to ill health and environment degradation.

There are at least three ways in which the industry has a profound influence on our dietary patterns. The first is through the prices of the foods that we purchase. The second is through the quality of foods that are placed in the market. The third is about the quantity of them.

Price dynamics have been dramatic in the food sector. People today are spending, as a proportion of their household budget, a fraction of what they were spending 30, 40 or 50 years ago. That has been achieved mostly through a reduction in the price per calorie of certain types of foods, although not all. There has been a different pace of reduction of prices per calorie in different compartments of the food sector.

Products that have been talked about by previous speakers are clearly the ones whose price per calorie has been reduced the most—manufactured products, highly industrially processed products, and what we call ultra-processed foods in today’s speak. This has been achieved through what has happened in many sectors of industry and the economy. Large-scale production, standardisation of products and standardised ingredients have allowed companies to market their products on a large scale, using the power of brands as a major tool for getting consumers to consume their products, as was discussed in the previous session.

That has had much influence, making those highly industrially processed products dominant in our diets and in the food market more generally, which has reduced production costs in a major way, increasing the profits of those producers. That has also been made possible through an increasing market concentration, the extreme power of big food conglomerates, as Dr Ralston emphasised, particularly food manufacturers, that have had an opportunity through that acquired power to influence Governments and government policy. It has also allowed them to have a profound influence on consumer choices, through marketing that goes to the limits of what two Nobel prizewinning economists, George Akerlof and Robert Shiller, defined a few years ago as “manipulation and deception”.

That is what some parts of the industry are doing to consumers. Other industries are developing in this way too. The marketing tactics that are used by manufacturers are often at the limits of manipulation and deception.

- Q125 **Lord Colgrain:** Thank you. Can I follow-up with something you said, Dr Ralston? I have read that Nestlé shareholders have been asking for the reformulation of some of their products on the basis that they are too unhealthy and HFSS-orientated. Do you see that as a very helpful thin end of the wedge, or will the senior management not listen to the shareholders?

Dr Rob Ralston: An example of a major multinational company trying to shift its product portfolio was Pepsi in the early 2010s. The CEO attempted to make a move towards reformulation or shifting their portfolio to the healthier options in their brands. That was met with strong opposition from shareholders, because revenues and profits were going down. Eventually, Pepsi switched back to promoting more of its ultra-processed food offerings, but there is certainly a place for shareholder activism as far as trying to push corporations to engage in more responsible activity goes.

I am happy to speak about reformulation further, but from what I have seen and from the research on reformulation in a UK context, we find this being affected where there are costs for non-compliance and where political and public interest in reformulation is high. The comparison I would make is between the soft drink industry levy and salt, sugar and fat reformulation programmes.

We have had 25 years of those programmes with very little progress. Public Health England had a sugar reduction programme with a target for a 20% reduction in sugar. Its evaluation showed that only a 3% reduction in sugar had been achieved. With the soft drink industry levy we have seen a 43% reduction in sugar. I think the reasons for this are that for the soft drink industry levy there was a financial cost for non-compliance. More importantly, as public demand for action, political interest and the salience of an issue increase, it becomes harder for business actors to oppose or undermine policies. We see that in the soft drink industry levy.

A simple rule for understanding business influence and business power is simply that business power tends to go down as political salience and public interest rises. Reformulation is quite a dull topic, so there are quite low levels of political and public interest. That allows businesses to oppose those policies because the reputational costs or risks to them are quite low. We can contrast that with the soft drink industry levy. There was a lot of attention on that, making it harder for businesses to oppose it, leading to larger reductions in sugar content and a more effective reformulation strategy.

Q126 **Baroness Pitkeathley:** I want to pursue a bit more the role of the food industry in encouraging healthy eating, bearing in mind your strictures about the food industry. How does it influence the diet and the unhealthy nature of some of the food we eat? If you have any examples of product development and how that has worked, that would be very useful.

Professor Barry Smith: A lot of the people in the industry are very well intentioned. They want to reduce salt, fat and sugar in the diet and set out to do so. That is certainly what encouraged me to work with companies. People would always say to me, "Can we take 30% of the sugar out of this product and it still taste the same?" I would say, "No. It would taste different, interestingly or otherwise". That is the goal. The trouble is that their engineering of the products, even when well intentioned, has unwelcome consequences.

Even for reformulation, you might think, "Let's try to reduce the sugar and the fat", and so put in artificial sweeteners or use substitute fats. The trouble is that our brains and our sensory apparatus are designed to tell us what is in our food so that we know when we have had enough and that we are getting what we need in our gut. When you have substitutes, especially non-nutritive sweeteners, the brain is sending a signal to the gut from the taste receptors that you will get sugars, and then you do not. It is much harder than you think to bluff our sensory systems into thinking that we have had sugar.

When you have aspartame or any other artificial sweetener, or stevia, which is a natural substitute sweetener, they do not taste the same. They have a cloyingness in the mouth and tend to last a bit longer. Stevia has a bitter finish and does not have the fullness of sugar. So to stop the

³ Note from witness: See Mary Burke and Dana Small (2015) Physiological mechanisms by which non-nutritive sweeteners may impact body weight and metabolism:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4661139/>

Dalenberg, J,et al. (2020) Short-term consumption of sucralose with, but not without, carbohydrate impairs neural and metabolic sensitivity to sugar in humans:

[https://www.cell.com/cell-metabolism/pdf/S1550-4131\(20\)30057-7.pdf](https://www.cell.com/cell-metabolism/pdf/S1550-4131(20)30057-7.pdf)

clayingness the companies add a bit of salt that abruptly ends that feeling in the mouth and, because you do not get the fullness, they probably have to put in some soluble fibre. Then you need something to mask the bitterness. Companies are delighted to find ways of doing this. I have heard companies say, "We can do you a very nice stevia with no bitter aftertaste, but that'll cost you". It can be done, but that is an awfully big cocktail of additives to give us something that feels to us like sugar.

There is now evidence from work by Dana Small and colleagues at Yale that when we get those artificial sweeteners our bodies are thinking that we will get sugar and no sugar comes.³ If you are taking carbohydrates at the same time—for example, having Diet Pepsi with a carb-heavy lunch—the body will start storing those calories more because it is getting a signal that it was going to get a lot of that energy and did not get it, so it starts trying to find and chase the calories. That is a very bad thing.

We detect fat not because it has a particular taste but through its viscosity and slipperiness. That is very hard to mimic. You need emulsifiers, thickeners, bulking agents and a lot of other things working together to bluff you into thinking that you are getting fat. We used to have ordinary systems that told us what was in our food and helped us to regulate when we were getting it, and we could stop. We are tampering with those systems and bypassing them in some way, which is not good.

For all those delicious, irresistible savoury snacks—the crisps, the Doritos and everything else—you always see three ingredients on the back: MSG, which is a perfectly okay additive; disodium inosinate; and disodium guanylate. These are two types of umami-tasting food: glutamate from the MSG, which is found in a lot of foods naturally, and ribonucleotides such as guanylate and inosinate, found in meat and fish. When you put these two types of umami together, they give the deliciousness that you get from bacon and egg, ham and cheese, tomato and anchovy and pea puree and scallop.

That synergistic umami lets your umami receptors fire at a much higher level. This tells the body, "I'm going to get a lot of protein". The protein does not come and you go on consuming. The body is trying to extract from that food something that is not there. This results in people being overfed and undernourished. I am afraid that a lot of people with obesity are in exactly that position; they go on eating and trying to extract the nutrients and being bluffed into thinking that they are there in delicious foods. When they are not, they are overfed.

Professor Franco Sassi: It is a very important policy for Governments to be able to incentivise reformulation in the industry, but reformulation has many facets, some of which are clearly problematic from the point of view of influencing consumer behaviour. Reformulation is a strategy widely used by the industry to adapt to changes in consumer preferences. The industry is required to reformulate its products all the time. It also caters for the needs of some consumers who demand healthier products. There has been an increasing trend of industry putting healthy products

on the market, which has been seen as a way of it contributing to incentivising healthier diets.

There are a number of problems with that. First, this is an industry strategy and, as with all such strategies, does not involve changing products that successfully produce profits for those companies. It simply involves an expansion of the range of products that the companies offer. Along with the healthier products put on the market, the older, less healthy products survive. Of course, consumers are free to choose one or the other, but in the end the company will market more heavily those that provide the largest profit margins.

This is where the role of Governments comes in. If left entirely to industry, reformulation will lead to non-optimal outcomes. However, if guided and supported, as Dr Ralston was emphasising, with mandatory incentives or taxation, it could produce the outcomes that we want. We have seen that with the soft drinks industry. That has been an incredibly successful government policy—from the point of view of reducing sugar purchases and intakes by consumers, not necessarily from the point of view of replacing sugar with artificial sweeteners, as Professor Smith was emphasising. That has not necessarily been ideal. However, it was a successful policy because it provided the industry with a strong incentive to reduce the quantity of sugar that it put in its drinks. That was partly achieved by introducing new products on the market and partly by reducing the levels of sugar in existing products.

Baroness Pitkeathley: Thank you. Do you have more to add on product development, Dr Ralston?

Dr Rob Ralston: I have nothing to add on product development, but I completely agree with the point about reformulation made by Professor Sassi. It is quite useful for companies to have a diverse product range, so there will be reformulated products in addition to originals. Companies such as Coca-Cola have been more or less explicit that they will never reformulate their best-selling product, which is Coca-Cola. That is important to bear in mind when thinking about reformulation. It is a political and economic strategy that can work for companies as part of a broad portfolio.

Q127 **Lord Brooke of Alverthorpe:** I declare an interest with regard to stevia. It is imported into Japan more than any other country in the world, and they live longer in Japan. We did not eat sugar 400 years ago at the scale we do now. We are eating sugar on a far bigger scale than before. Professor Smith, how do we effect changes to reduce the use of ingredients that we have put in but that are not required at this scale?

Professor Barry Smith: You are quite right to remind us that sugar was once a luxury. It was once something that very few people had. I do not think that we can wean people off it or convert them to more interesting flavours just by trying to imitate it with industrially designed substitutes. That is not the strategy.

Lord Brooke of Alverthorpe: Stevia is natural, not industrialised.

Professor Barry Smith: Stevia is natural, but it has its problems. It has a bitter taste, so you need companies such as Firmenich to provide you with a thing that will mute or mask that bitterness. It is not a straightforward solution.

If you will allow me to generalise your point about the food industry, there are things that we are committed to eating because we have not learned to retrain our dietary habits. The same thing goes on not just in sugar but in the move to plant-based eating. It is good that we want people to eat more plant-based food, but what do manufacturers do? They make artificial burgers that try to imitate exactly what a meat burger is like. They produce heme, a chemical that smells of blood, and create a texture that has the springiness of meat. People eat them and think, "It's just like a meat burger", but our gut cannot digest that springy texture, so they have to put a hydrocollide, methylcellulose in there, which is a liquid laxative, so that you can deal with it.

That should not be the strategy. Let us not make imitations of those things but try to wean people away from them or make good natural foods delicious. You have to make them delicious. You have to umamify vegetables and do interesting things with fruits. You cannot expect people just to have substitutes, because the substitutes are causing their own problems.

Q128 **The Earl of Caithness:** My question has been well covered, but, Professor Smith, could you write to us with any evidence of long-term change in our bodies because of all this filth to which we are being subjected?

Professor Barry Smith: I am happy to send you some research on that.⁴

Q129 **Lord McColl of Dulwich:** A Cochrane review has shown that saturated and unsaturated fat are not harmful to the human. We know that when fat goes into the duodenum it releases a hormone from the duodenal mucosa called CCK, which acts on the stomach, delaying its emptying. So one feels full early on in a meal and stops eating. It controls obesity, as does whole milk. We do not need that semi-skimmed stuff, which was an industrial by-product that used to be chucked away and was then fed to animals. Then they thought that they could get away with feeding it to humans, telling them that whole milk is bad for them. It is not.

⁴ Note from witness: Long-term effects on the body: NCD Risk Factor Collaboration. Height and body-mass index trajectories of school-aged children and adolescents from 1985 to 2019 in 200 countries and territories: a pooled analysis of 2181 population based studies with 65 million participants Lancet 2020:396; 1511-24. Effects of high density food on the brain. From Dana Small's lab: <https://www.annualreviews.org/content/journals/10.1146/annurev-psych-122216-011643>

Professor Barry Smith: I agree.

Professor Franco Sassi: We should move away from an approach that focuses on individual nutrients, including sugar. The UK has been a pioneer in developing a nutrient profiling model that has been widely adopted as the basis for government policies, which is the way to go. It is not just one nutrient that makes a difference; it is the combination of different nutrients and the intake levels of different nutrients in our diet, along with the processing dimensions, which are focused on in ultra-processed foods.

Q130 **Baroness Suttie:** I want to move on to managing the influence of the food industry on dietary trends. How effective are the current voluntary and mandatory measures? Do you think that voluntary measures can ever be truly effective?

Professor Franco Sassi: The evidence is very clear that voluntary approaches do not work. We have prominent examples in this country, starting from the public health responsibility deal. Independent evaluations showed that it has not been effective in achieving its goals.

The example that Dr Ralston gave of Public Health England's analysis of the effects of the sugar reduction programme, with and without the tax, is very clear. In all areas where a tax was not used, the results achieved were relatively disappointing. The biggest reduction was achieved in breakfast cereals, which was a 15% reduction, well below the 20% target. With the tax that was applied to sugar-sweetened beverages, the sugar reduction was over 40%, so there is no question that mandatory approaches are needed.

Given the overall importance of effects on health and the environment, the food sector is very lightly regulated not just in the UK but worldwide. But it is definitely very lightly regulated in the UK. There is a lot of scope for further regulation that uses taxation in a better way. We do not need to increase taxes—there are already taxes on food—but just to use them better. We need better and more effective regulation that keeps up to speed with technological developments in the industry, for instance in marketing technology.

Dr Rob Ralston: I am conscious that I have spoken about this a lot, so I will try to be brief. I agree with Professor Sassi that, over time, we find in the UK and in many other contexts that voluntary or self-regulatory approaches are less likely to be effective than mandatory or legislative approaches. That is fairly consistent.

Where Governments have chosen to create public/private partnerships, such as the public health responsibility deal, the outcome has been that food industry actors and trade associations that participated tended to exercise a disproportionate influence over policy-making. That led to lowest common denominator solutions. The reason for this, and why you have these outcomes in voluntary approaches and public/private partnerships specifically, is that these partnerships depend on the

agreement of industry actors to implement them. We see a watering-down of standards across the board, and you find similar patterns and dynamics in the EU and across other countries.

Professor Barry Smith: As my colleagues have said, voluntary measures are no good. We need mandatory measures. I am reminded of when the British Navy discovered that people were getting scurvy and that giving them citrus fruit, because of vitamin C, cured them of scurvy. The Navy took limes on board ships, which is why the British were known as Limeys. It would have been a disaster to leave it to individual ship-mates to choose, "Do I consider it worth while to bring a lime on board?" It needed activity from the British Navy to institute that to cure scurvy. We need that.

A worry I have is that I see the industry getting more encouraged to drop the UPF label. I know there is difficulty with the definition, but it wants to stick to high fat, salt and sugar, because we understand that—"Leave it to us and we will reformulate it". I have heard it said many times: "Aren't these two definitions largely overlapping? Why don't we stick to HFSS?" If you start intervening and changing HFSS, they will no longer overlap. The bump in the carpet will come up elsewhere, because you will still be putting in additives and using techniques and methods that drive consumption.

One side of that equation, HFSS, tells you what is in a product, how many calories it has and what they consist of—salt, fat and sugar. They can be offset by other good things, such as protein, fibre, fruit and so on, but HFSS does not tell you how much of it you will eat or what will incline you to consume it. If we still want these things, we will not have done the job.

There is an analogy with smoking and the tobacco industry. It knew that it had a problem with tar and nicotine, so it said, "Let's reduce the tar". The industry reduced the tar because it knew that the nicotine was addictive, so it would still drive the use of low-tar products. We have to look at the processes, the ingredients and the means of driving consumption—driving wanting that you cannot turn off. I would not concentrate on just HFSS.

Q131 **Baroness Jenkin of Kennington:** I declare my interests as on the website. We know how influential the food industry is, but in what ways does it influence the process of developing policy on diet and obesity?

Dr Rob Ralston: I shall pick up on the example that I mentioned earlier and add another. Occasionally industry will outright oppose a policy, and in some instances it will do what is called hedging. Hedging strategies mean that essentially food companies and industry actors will engage with different forms of regulation, but with a view to minimising the cost of complying with it.

A perfect example of that is the public health responsibility deal implemented by the coalition Government between 2010 and 2015.

Industry actors were fairly happy with that partnership because it allowed them to reach lowest-common-denominator solutions, push for very weak standards on issues like calorie reduction and even block policies on, say, marketing. A useful way to think about influence is that the industry will often participate in these policies and be enthusiastic about them, in part because that allows it to try to influence the design of regulation in ways that avoid any types of policy that threaten their core business models. That is an important aspect of how food industry actors are influencing policy-making.

I emphasise that, while we often think about the political influence of corporate actors in lobbying and public relations, another aspect of that is that Governments themselves pursue approaches such as public/private partnerships or different forms of collaboration. When we think about the influence of food industry actors, we also need to consider the approach taken by the Government and whether different approaches can be taken—approaches that might ensure a more transparent and accountable means of making public health policy.

Professor Barry Smith: My colleagues will probably cover this pretty well, but I will give you a personal anecdote. I was invited to the UK Food and Drink Federation black-tie dinner this year. All the major players from the multinational food companies were there, and there was a politician at every table. So I think the lobbying is strong.

Baroness Jenkin of Kennington: Thank you. That is a useful anecdote.

Professor Franco Sassi: I will include in my written evidence the *British Medical Journal* editorial that was published in 2013 by Margaret Chan, then director-general of the World Health Organization, in which she clearly set out the tactics of big tobacco, big alcohol and big food—basically the three industries that the WHO has been dealing with for a long time.⁵ Of course we know the food industry is different from the other two industries, but the tactics they use are exactly the same. In response to the science being produced by many around the world on climate change, the industries that are contributing to climate change are using exactly the same tactics again, so the tactics are very well known. I emphasise that many of these tactics are perfectly legal. They may not be legitimate, or desirable, but they are legal.

There is a duty for Governments to set red lines that industry cannot surpass. It is extremely important that Governments understand that the activities by industry need to be limited within constraints that the Government decide. Those red lines are not there at the moment. The industry does more than we would want in influencing policy because the rules are not there or are not very clear.

The Chair: Dr Ralston, do you consider the recent delay in the implementation of the advertising ban on unhealthy foods and bulk

⁵ Note from witness: See <https://www.who.int/director-general/speeches/detail/who-director-general-addresses-health-promotion-conference>

promotions to be an example of the hedging technique that you just mentioned?

Dr Rob Ralston: Possibly. I could not speak specifically to what has happened backstage or behind the scenes regarding that policy, but certainly hedging tends to be about lowering the cost of compliance. Industry will often devote a significant amount of attention to the very specific design, the definitions and issues of standards—quite technical, complex issues.

To go back to something that I mentioned at the start, where issues are highly technical, and where politicians and policymakers may have limited technical information or understanding of an issue, that is where business actors can exercise influence. We really see that with issues such as reformulation. Similarly, I assume that you would find similar dynamics regarding advertising or multibuy promotions.

Q132 **Lord Brooke of Alverthorpe:** On what kind of terms should the Government and the scientific community engage with the food industry, if they are to engage in the process of gathering evidence and developing policy?

Professor Franco Sassi: The role for industry is generally limited. In research, there are two sides. One is producing evidence. Research should never be funded by industry. If it is, there is a conflict of interest that should be disclosed, and people should be aware of that funding when they are judging the evidence alongside other evidence that has been produced independently. Industry can participate in research only when research involves experimentation that can only be done in collaboration with industry—for example, experimentation with new types of products, new sales models, new marketing approaches and so on. In that case it is legitimate for industry to participate, but again that has to be done transparently.

When it comes to participation in the policy process, there is clearly room for consulting industry. Industry has a role to play at the table in disclosing their concerns, issues there may be in connection with the implementation of the policy and the impact that may have on the industry. However, when it comes to deciding what policy design should be adopted, there is no role for industry to play there.

Professor Barry Smith: I agree with Professor Sassi, but I think we can go further. The food industry needs to be mandated to be transparent so that independent scientists can evaluate the effect and impact of manipulations of particular food products on our health. There is a lot of information stored about that, but how do we have access to it? Currently that does not happen. That is key, because from a food-processing perspective the world will have to feed an awful lot of people—10 billion by 2050—and we really need the food industry on board. We need processing, but it has to be done smartly. If we are to figure out how to feed people for health, pleasure and the planet, we need to work inside the food industry, evaluate what it is doing and try to make it better.

Dr Rob Ralston: I shall pick up on something that Professor Sassi mentioned: the types of interaction that public officials have with industry actors. We can think about what guiding principles might be implemented for managing potential conflicts of interest with the food industry. We might think about ensuring that any meetings with industry are public and transparent. We might think about guidelines seeking to ensure that interactions between public officials and industry maintain the credibility, integrity and independence of government and public agencies. We can imagine the types of interaction and confine them to those necessary for the public officials or agencies to implement effective public policies and limit the risk of disproportionate political influence.

Maybe the kind of questions that you would seek to ask to inform those guiding principles are whether an actor's core activities are compatible with public health, or whether engagement with a food industry actor offers a clear benefit for public health policy. So there are ways of thinking about guiding principles for government, but I emphasise, as Professor Sassi did, that Governments need to grapple and engage with this to ensure transparent and accountable public health policy-making.

- Q133 **Lord Krebs:** Franco, you talked about how you did not think that the food industry, or any industry, should be involved in funding research in academic institutions. You will know as well as I do, because I am an academic too, that the whole incentives system, through the research excellence framework and the universities' policies, is to encourage collaboration with industry. Do you think that is wrong? Maybe we should be recommending to the Government that they stop trying to encourage academics to work with industry.

Professor Franco Sassi: No. I do not necessarily think it is wrong. I think we need to be selective about the type of funding that we think is acceptable and the type that we think is not. Industry funding would be completely inappropriate for the type of research that I do, which is entirely focused on the effectiveness of policy approaches or the influence that different determinants may have had on diet and health outcomes.

For the type of research that some of my colleagues at Imperial College do, industry funding is acceptable. As I say, some research involves the experimentation of new technology or new approaches to the production or the marketing of food. If you want to do that kind of experimentation, you need to collaborate with industry and to accept that there is industry participation, including in the funding of research, because it is in their as well as the public's interest that this research is undertaken.

So there are instances in which it is appropriate and acceptable that industry gets involved in the funding or production of research, but it is certainly not appropriate and acceptable in research to do with the production of evidence of the effectiveness of policies.

- Q134 **Baroness Boycott:** I have pretty much had my question answered, but I would like a comment from Professor Smith on it. It relates to things like the British Nutrition Foundation and other organisations like SACN, which

sound very authoritative and not attached to the Government and which you think will have only scientists and will certainly not have industry, but when you dig into them you find that there is a lot of industry in there. Do they just model smoking, climate change and the rest, in your view?

Professor Barry Smith: We just have to have clean hands. I very much agree with the question raised by Lord Krebs. We want collaborations and funding, but a lot of academics get rather carried away by the idea of working for somebody, getting all this money and bringing it into their institution, and they kind of lose their heads. You want to set up very good conditions for the independence of the research and how it will be published, and you need bodies that promote themselves as being quite authoritative to be honest about where their funding is coming from and why they are taking it.

Imperial College had a fantastic result from collaboration with industry on what makes anything salty. What makes anything salty is how many salt receptors are touched by an NaCl molecule. It is working on a nanotechnology that will allow a salt molecule to unwrap itself into four so that it can touch four receptors at once. That is making something salty while massively reducing the amount of NaCl used. You want that to go on, and you think that is a good idea.

Sometimes academics are doing cheap R&D for industry and they have to price it carefully in terms of their integrity, the sums of money they are taking and why.

Baroness Boycott: Would you legislate for a better system, or would it just be a recommendation? How would you make that become the way we do things?

Professor Barry Smith: I would like colleagues like Rob and Franco to provide some help with that. We are naive. Encouraged by the funding councils and our universities, we go into industry and take the shilling, and we do not really know how these things are set up. We sign NDAs. I want to be as candid with you as I can, but some things I have not been able to say, because I am still bound by non-disclosure agreements. We need help and guidance as academics, about how those collaborations should be regulated.

Baroness Boycott: I did not know that you all signed NDAs.

Q135 **The Earl of Caithness:** I want to press you a little more on that. Who is going to give you this help and guidance, and what is to stop a situation occurring in this country like the one that happened in America in the 1970s with the sugar scientists putting all the blame on fat?

Professor Barry Smith: Yes, a sort of pass the parcel or shell game. Again, academics have some skills and abilities, but they are not very good at being entrepreneurial, regulation-canny, able to deal with industry officials. So, if we have independent bodies that look at it, or universities prepared to put a little more thought into how they might

mandate the kind of interactions they have, that would be very helpful for the academics concerned, me included.

- Q136 **Lord Krebs:** In a way, you have started answering my question—you have answered in relation to academia—but what are likely to be the most effective strategies for managing the influence of the food industry on diet and food policy in the future? Can any lessons be drawn from the regulation of other industries such as tobacco and alcohol, and what evidence would support any suggestions that you might wish to make?

Professor Barry Smith: It is a tricky question. We know that good regulation will come from operationalising the definitions that we need in order to measure, assess and evaluate what the food industry is doing. There is a lot of complaining about the ultra-processed food definition. It is a classification that gets us into the area of concern and looks at some of the types of ingredients and processes that we are worried about. But if we are going to get decent regulation and decent engagement, we have to operationalise these things. We might end up partitioning that space into the kind of additives we are worried about—certain kinds of emulsifiers, certain things that we know have a mechanism and which we have reason to think have a health risk.

In the other space, we just have to look at the purpose of the processing. Is it to reduce the cost to the consumer, making foods available and affordable, but also to generate profit? That looked like a very (good) coincidence of interests, but it did not take into consideration all the things that we should have been concerned about. Are we regulating food anywhere near as much as we regulate, say, pharmaceuticals. Pharmaceuticals will be very heavily scrutinised for the effects that any of their products brought to market will have on all of us. Yet additives are being created that go into our diet and are eaten every day in large volume, and they are subject to very little scrutiny.

We have to get very clear about the fact that these are industrially produced products designed with particular purposes in mind, and they will have to be looked at with something like the scrutiny with which the tobacco industry was looked at.

Professor Franco Sassi: Food is definitely different from tobacco and alcohol, but there are some lessons that can be learned. One aspect that is really different is the extent to which policies are effective in changing diet and obesity. Diet and obesity are hugely complex compared to tobacco and alcohol, and the effectiveness of each policy approach is relatively limited compared to what we see in policies that are aimed at tackling tobacco and alcohol consumption.

That means that we need to use complex strategies that involve multiple policies. Those policies need to be coherent among themselves. An extremely important aspect is the development of evidence-based tools that can support multiple policies in a consistent framework. One example is the nutrient profile model, which the UK has been working on for a long time. The UK's nutrient profile model has been a basis for

policies as diverse as taxation, marketing regulation, placement and promotions regulations, food labelling. When you have a tool like that, you can implement a number of policies that are all acting on different determinants of the problem, based on a common tool that makes them consistent, so the incentives that consumers and industry get are all aligned to move the production and consumption of food in a consistent direction.

Lord Krebs: Thank you. Rob, do you wish to add anything?

Dr Rob Ralston: Sure. If it is okay, I will briefly describe lessons from the tobacco control experience. Researchers, policymakers and other domains, including climate change and alcohol, have looked at the Framework Convention on Tobacco Control as a model. This is the first legal treaty negotiated by the World Health Organization, and it is the only international treaty that explicitly recognises the potential for a corporate actor to subvert or undermine its objectives. That means that a specific article in the treaty requires parties to the treaty to protect policy-making from the interests of the tobacco industry. A number of different lessons and guidelines have come out of that that are relevant to food, particularly transparency of interactions, disclosures of financial conflicts of interests for public officials, and codes of conduct.

On thinking about comparisons between the food industry and tobacco, clearly they are different products. Tobacco is exceptional as a product; no other consumer product kills one out of two users when used as intended. Having said that, the political practices and the corporate political strategies of the food, alcohol and tobacco industries are often very similar. They often share the same public relations companies and there is often a revolving door between these sectors and companies.

When we think about political influence, food companies operate in ways that are very similar to tobacco, even if the products themselves are different. As to how you might manage industry influences, for the negotiation of the Framework Convention on Tobacco Control it was very obvious from the outset that engagement with the tobacco industry should be carefully managed and that steps should be taken to protect the process and negotiations from industry influence. That might seem like a simple and obvious step to have taken, but a reluctance to acknowledge conflicting interests has been an enduring political challenge in food policy. Part of the problem and the challenge is to confront policy areas or issues where the interests of certain food industry actors conflict with public health objectives. The challenge and task for politicians and policymakers is to grasp that issue and engage with it directly.

Q137 **Lord Krebs:** I have a tiny follow-up question for Barry—two questions really. You have mentioned on several occasions this morning the dangers inherent in these components of so-called ultra-processed food, such as emulsifiers and thickeners. My first question is: why has the Committee on Toxicity not produced evidence or assessed the evidence on these? Maybe you have a view on that. Secondly, because you referred at one point to the addictive qualities of some of these additives,

should the Advisory Committee on Borderline Substances be looking at them?

Professor Barry Smith: I am not sure I said “addictive”, because I am very careful, but we are certainly moving in that direction. Food companies are encouraging wantings, cravings and urges to eat. They want the food to be irresistible. I have turned down work where people said, “How do we make this absolutely irresistible?” I will not do it. But notice that the food companies say “moreish” or “snackable”. They use words that are terribly cosy and comfortable but are certainly getting near something like addiction. There is more work and research to be done.

On emulsifiers, you know as well as I that there is there is good mechanistic evidence of particular emulsifiers causing colitis in mice. It is a mice study and the question is whether it transfers, but why are they causing colitis in mice? Emulsifiers make the food gel and cohere, but they also coat the stomach and start irritating it. Since we have had a rise in the amount of ultra-processed food with lots of emulsifiers in it, we have also seen an amazing rise in irritable bowel syndrome. That is correlational but it is interesting to think that, rather than just giving people more pharmaceutical products to deal with irritable bowel while they go on eating things that might be giving them such stomach lining problems, maybe we should tackle the original problem.

Q138 **Baroness Boycott:** Dr Ralston, could you comment on how, in the past, the tobacco industry was hugely involved in sport, with the Marlboro Man sponsoring football? We stopped that. Then there was that fight between the Blair Government and Bernie Ecclestone. Now all of sport seems to be associated with energy drinks. Do you see the same kind of pattern? In what ways could you stop that association, with kids thinking that if they drink Red Bull they will be better, speedier, happier and healthier? It seems really dangerous to me.

Dr Rob Ralston: There are certainly similar debates in public health research and, specifically, food policy about the influence of sponsorship and marketing, particularly related to sports, of energy drinks and, more generally, what we might now term ultra-processed foods. On the lessons from the tobacco experience, there was a long delay of about 30 years between the studies that robustly proved that cigarettes cause lung cancer and the implementation of robust forms of legislation, such as the sponsorship ban in F1 in the case of New Labour. In some senses, one of the lessons is to try to avoid that situation in the case of food and avoid this 30-year delay.

Sports sponsorship is a really important area where there may not be as much attention as there should be on the ways that companies seek to subvert or undermine particular forms of regulation. To use an example from alcohol, in France the Loi Évin bans alcohol sports sponsorship, and alcohol companies in, say, the Champions League advertise their 0% alcohol products but nevertheless still have product logos on them. There are various ways in which they can subvert these types of regulations, so

part of the challenge is understanding that and thinking about the lessons from tobacco that we can apply to food and energy drinks. In all likelihood, that will be a mandatory or legislative approach.

- Q139 **Baroness Jenkin of Kennington:** I am not sure whether this is the right session in which to ask this, but someone mentioned a revolving door. Are you able to tell us how prevalent the revolving door is between government and the industry? I am thinking particularly of civil servants in the DoH and other relevant departments. How transparent is that?

The Chair: Is that in relation to personnel?

Baroness Jenkin of Kennington: Yes.

Professor Barry Smith: It is hard to say, but I would not be surprised if there was quite a revolving door.

Dr Rob Ralston: I cannot comment specifically in the case of the Department of Health, but you do find across other industries, particularly pharmaceuticals, that there tends to be a revolving door between regulatory agencies and companies. There are obvious reasons why a company would want a former official in a regulatory body, which leads to what is called regulatory capture, where the types of policy that a regulatory agency is developing become captured to some extent by industry. We see those dynamics in the pharmaceutical industry in particular, but it could also apply to food.

- Q140 **The Chair:** And, indeed, the opposite: from industry into regulators and government departments. Dr Ralston, can I take you back to something you said earlier about the idea of having an international treaty similar to the tobacco one? What influence could the UK have in initiating something like that?

Dr Rob Ralston: I will keep it brief. From my sense of the Framework Convention on Tobacco Control, the impetus for that treaty came from what was happening at a national level. The reflections of those who were involved in the negotiations on that treaty were that it brought together the best practice that was already happening at a national level. The UK Government could develop effective forms of regulation to tackle the food industry. I understand that there are calls for a global treaty on food and on alcohol, and these are ongoing. I think the impetus is more bottom up and will come largely from countries taking these types of action at a national level, and for those to become part of a treaty. The UK Government need to be a leader in regulating the food industry in various ways. That might be marketing or looking at lessons from countries such as Chile on front-of-pack labelling. There are various options that the UK Government could explore and implement.

The Chair: It is similar to the Government's ambition to become a leader in regulating AI, perhaps. I thank our witnesses very much indeed for their very interesting evidence.