Behavioural Insights, Nudge and the Choice Environment in Obesity Policy

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Obesity has become a growing health concern, with the number of obese people in the world now estimated to exceed the number of undernourished people (NCD Risk Factor Collaboration 2016), and 19% of the overall adult population in the OECD categorised as obese (OECD 2017). Associated with many health risks from diabetes and cardiovascular disease to some cancers and reproductive problems (Jebb 2004), obesity threatens not only public health but also health systems and health care costs. Consequently, it has quickly risen in public policy agendas and a diverse set of measures have been developed as part of obesity policy, the overall effectiveness of which so far remains debatable. In this context, behavioural policies, and particularly nudge-based measures as a sub-type of them, focused on changing the behaviour of individuals according to insights from behavioural economics and proved very popular with policy makers, who were able to use them in line with the agendas of small state and austerity. This article aims to discuss the limitations of nudge as a policy tool in the fight against obesity by critically analysing the policy debate and developments in the case of the UK. The UK provides us with a suitable case, as it is one of the worst performers in terms of obesity outcomes and indeed has the highest levels of obesity in Europe (OECD 2017). Moreover, Government ministers have often framed obesity in moralistic terms blaming it on individual choices or weaknesses and the liberal paternalism of Nudge often plays in to this sense that social improvement is a function of individual choice.

Since obesity results from a surplus of calorie intake over physical activity, it is easily understood as a matter of individual behaviour rather than a complex problem with underlying economic, social and political relations. Hence the extent to which governments can and should intervene in individual choices becomes controversial. However, it should be noted that the choices of individuals in relation to obesity are also influenced by external factors such as production and marketing structures or socioeconomic inequalities, which makes obesity policy an especially interesting area from the perspective of effectiveness of behavioural policies. The core argument of the article is that whilst nudge may be successful at changing behaviour in certain circumstances, it can only have limited effect where the general choice environment fundamentally shapes the choices that people make. In other words, the ‘choice environment’ is not necessarily limited to the immediate choice architecture, as it is usually assumed in nudge-based measures, but needs to be defined more broadly to encapsulate structural factors that underlie the rise of obesity. Where choices are constrained by social, economic and political structures, as we argue is the case with obesity, behavioural change requires more than nudging.

To substantiate this argument, the first section of the article reviews the literature on behavioural insights and their application to policy with a focus on the role of environmental influences upon individual behaviour. It also outlines the structural factors that make part of these influences in the case of obesity. The second section then analyses the political debate around obesity and policy developments in the UK by systematically examining recent policy documents and parliamentary papers as well as the relevant health policy literature. The analysis in this section indicates that despite a growing recognition of structural factors in rhetoric, concrete measures which threaten established interests are avoided as much as possible, and highlights the risk that a strong emphasis on nudge may erode the political viability of more structural interventions. However, we also suggest that similar behavioural insights can indeed be used to formulate different measures, as exemplified by the recently introduced sugar tax that certainly goes beyond nudge in the conventional sense but has again been justified in terms of nudging people towards healthier choices. The effectiveness of such measures ultimately depends on how they are combined with other policies and the extent to which they address the structural factors underlying the rise of obesity alongside individual behaviour.

**Behavioural Policies and Choice Environments**

Behavioural economics maintains that human decisions do not always rely on full rationality, as assumed in mainstream economics, but also on biased judgements, erroneous perceptions and heuristic devices. This is explained by the coexistence of two modes of decision-making that interact in complex ways (Kahneman 2003). While one mode corresponds to deliberate and effortful reasoning, the other one is rather about intuitive thought, which is taken as the norm rather than the exception in terms of how people make decisions (p.1450). The attribution of a large role to intuition as such indicates the main deviation of behavioural economics from the conventional rational choice approach. Moreover, although intuitive decisions are not rational, they are still considered as patterned enough to allow systematic analysis (Ariely 2008). In this sense, the ways in which human behaviour is shaped by some forces such as relativity, past decisions, social norms, emotions or expectations, and common mental features such as present bias, loss aversion and status quo bias have been discussed extensively (Ariely 2008; O’Donoghue and Rabin 2000; Thaler and Sunstein 2008).

The key point, which also has major implications for policy, is that there are strong external influences on people’s behaviour since the forces that affect intuitive decisions are highly dependent on the environment in which behaviour takes place (hereafter called the choice environment). As behavioural economics rather focuses on the processes of decision-making from the perspective individuals, it does not delve much into the question of what constitutes this environment theoretically. Kahneman only notes, in this regard, that the behaviour of individuals ‘is not guided by what they are able to compute, but by what they happen to see at a given moment’ (2003, p.1469). Norman talks about how the design of ‘everyday things’ plays a role in the errors that people make (2013) and Ariely broadly refers to ‘context effects’ again to describe the influences arising from the environment (2008). Yet, the scope of the choice environment becomes a more controversial issue when it comes to applying behavioural insights to policy because then a question arises as to how broadly the policies should attempt to modify the ‘environment’ in order to lead people towards better choices. A more precise definition is therefore needed, and various understandings of choice environment underlie different policy measures.

In nudge theory, which popularised behavioural insights in relation to policy, this environment is conceptualised as ‘choice architecture’ (Thaler and Sunstein 2008), referring to the way in which choices are organised. Nudge as a policy tool is thus about altering the choice architecture in ways that lead people towards better choices as judged by themselves without forbidding any options or significantly changing economic incentives (Thaler and Sunstein 2008, 5-6). The authors hence argue for a ‘libertarian paternalism’, clearly opposing any intervention in the market that can be seen as a restriction of the freedom of choice on these grounds, and warning against the risk of ‘going further down the paternalistic path’ (Thaler and Sunstein 2008, 251). In this approach, the choice environment is defined quite narrowly. Due to the libertarian emphasis on the primacy of freedom of choice, the choices in the market are considered as given and the attention to the role of the environment is focused on the immediate presentation of these choices. A similar conception is also articulated in other accounts that refer to ‘personal food environments’ as the key to behaviour change (Wansink 2012, 318), with the role of policy being limited to leading people towards changing these environments themselves to improve their own consumption decisions.

Although nudge may be able to affect the choices of individuals through the choice architecture as such, it seems to overlook the extent to which some architectures can be structurally biased and shaped by powerful economic and political interests. This is especially problematic in view of behaviouralist assumptions about human rationality, because once people’s choices are taken to be malleable, there is a question as to why broader features of the existing choices would also not have a fundamental impact on their decisions. Sunstein and Thaler indeed acknowledge this possibility in an earlier publication on nudge by noting that people’s preferences might change depending on what they consume (2003, p.1165), but quite indirectly because for them this is only a potential insight for market actors and not a legitimate reason for restricting any options:

…even those cafeterias that face competition will find that some of the time, market success will come not from tracking people’s ex ante preferences, but from providing goods and services that turn out, in practice, to promote their welfare, all things considered. Consumers might be surprised by what they end up liking; indeed, their preferences might change as a result of consumption.

In this regard, it is not clear why market actors would use their market power to promote the wellbeing of consumers rather than for their own profits. The authors indeed highlight the possibility that companies might try to profit from the features of human rationality through nudge (Thaler and Sunstein 2008, p.72; p.239). However, within the frame of nudge theory, this does not constitute a justification for more interventionist policy measures which are considered as too paternalistic and freedom-restricting. Therefore, the government should rather become a nudger itself, and try to lead people’s choices in the right direction despite potential counter-nudges.

In line with a narrowly-defined choice architecture, nudge-based measures in the area of obesity are mostly related to rather immediate environmental factors. Practical examples include changes in the design of food outlets such as supermarkets and restaurants, more accessible information disclosure practices such as product labelling and calorie counts, and social marketing campaigns for healthy lifestyles that incorporate behavioural insights into how they deliver their messages. Some scholars argue that such measures might be of notable success, especially if used as a complement to more conventional tools like regulation and legislation when necessary (Loewenstein et al. 2012; Oliver 2011). However, others are more sceptical about the effectiveness of nudge in the face of social problems that it targets, including public health (Marteau et al. 2011; Goodwin 2012) and problematise its role in undermining potentially more effective interventions or justifying a pro-market agenda (Bonell et al. 2011; Jones et al. 2014; Rayner and Lang 2011; Wells 2010). Moreover, the lack of attention to the wider socioeconomic context of human behaviour in nudge theory is criticised (Leggett 2014), and the role of behavioural policies in strengthening the moral discourse that focuses on the failings of individual responsibility is highlighted (Glaze and Richardson 2017).

Building on such criticisms, we suggest that obesity is an area that exposes the limitations of nudge particularly well because of the existence of strong structural factors, which constitute the choice environment of individuals beyond the immediate architecture of choices. In the case of obesity, these factors include the production structures that create high profit margins from processed foods, the expansive marketing of highly processed and calorific products, the power of the food and drinks industry, social inequalities in access to healthy food options and exercising opportunities, and changing practices of mobility in modern life. When the targeted choice environment is limited to the presentation of choices, as in the case of nudge, these factors are simply ignored despite taking the role of environmental influences in shaping behaviour as a theoretical starting point. Consequently, the emphasis on individual behaviour comes to reinforce the paternalistic elements of nudge through a moral discourse, and the effectiveness of policies is also undermined because it may not be possible to change behaviour in the presence of such underlying factors. One of the major weaknesses of the theory and practice of nudge is hence the failure to address the structures that play a role in shaping choices.

For instance, within current production structures, profits from processed foods are enhanced by subsidies for the ingredients of high-calorie fats and sugar (Franck et al. 2013; Gioventi 2013) and hence shaping consumer choices. This creates an inherent tension between food/agricultural policy which supports the production of High Fructose Corn Syrup and obesity/health policy which is attempting to reduce the consumption of processed foods and sugar. Similarly, expansive marketing techniques are used by businesses to promote the consumption of highly processed and calorific foods, which easily dominate the behavioural messages of the government trying to encourage healthier choices (Lobstein 2003). In the context of decreasing mobility in daily life, these are highly likely to contribute to the rise of obesity rates in modern societies. Moreover, the food and drinks industry, which is currently the largest manufacturing industry in Europe (ECSIP Consortium 2016), holds a powerful position to resist any policy that they consider as against their economic interests. On the other hand, there is a clear association between obesity rates and social class or area-level deprivation (Chief Medical Officer 2014; Marmot et al. 2010), confirming the role of socioeconomic structures and inequalities in terms of access to healthier lifestyle choices. Policies that target individual choices can thus only go a certain way in tackling obesity because such structures are an intrinsic part of environmental influences over the behaviour of individuals.

Meanwhile, it should be noted that behavioural insights, which have generally been applied to policy in the form of nudge, are in fact open to broader interpretations. In other words, the patterns of decision-making highlighted by behavioural economists do not necessarily entail a narrow understanding of choice environment; the environment that is targeted by policy can rather be defined in such a way to capture underlying structural factors. Some broader policy measures than conventional nudges have already been suggested by scholars relying on behavioural insights, such as behavioural economics-informed regulation, named ‘budge’ (Oliver 2013; 2015). The aim of budge is to prevent socially harmful activities of the private sector when they exploit the limitations of human rationality or to require businesses to use behavioural interventions that are expected to be beneficial to their clientele. Practical examples of this would include restrictions on advertising and other marketing strategies such as proximity placing of unhealthy products, and regulations about labelling. As such, budge policies are still largely concerned with the presentation of choices, echoing the choice architecture of nudge theory; however, they entail much more direct interventions in this architecture and address at least some of the structural factors underlying obesity, like the marketing power of the industry. Yet, as we will demonstrate in the case of UK below, both these policies and more interventionist measures such as taxation are faced with strong resistance and are politically difficult to enforce in a context where the legitimacy of policies generally relies on the idea of behavioural change through nudging.

**Nudge and Obesity Policy in the UK**

The UK had the highest rate of obesity among adults in Western Europe at 27 per cent in 2015, and was the second worst performer in all OECD in terms of measured overweight (including obesity) among children in the same year (OECD 2017). According to Foresight projections, 60% of adult men, 50% of adult women and about 25% of all children under 16 could be obese by 2050, and the wider total costs of obesity and overweight as percentage of NHS cost are expected to rise from 6.0% in 2007 to 13.9% in 2050 (Butland et al. 2007). These alarming trends have made obesity into a major concern for public policy, although it has largely continued to be perceived as a problem of individual choice rather than a broader economic, social and political problem, and concrete measures remained focused on behavioural change despite some recognition of underlying causes of obesity in policy debates. The UK therefore constitutes a good case for studying the dynamics behind the formulation of behavioural policies and their implications.

The view of obesity as a problem of choice has long been reinforced by different actors in the UK. The general industry and business position is that the problem is about people’s diets and broader lifestyles rather than specific foods or drinks on the market, as highlighted by the Food and Drink Federation’s Nutrition Manager Bussell who noted: ‘An individual food cannot be deemed good or bad, only whole diets, assessed over several days can be deemed as good or bad’ (2004). In other words, there is nothing wrong with what the food industry produces; it is the choices that consumers make about their diet. Policy makers from different sides of the political spectrum have also embraced similar views, with the corollary that no substantive political intervention is required. The Minister for Public Health in the 1997 Labour Government, Melanie Johnson, has illustrated this very well when she said:

We are doing a lot of things on obesity already – we have a food and health action plan under way. We have the Five-a-day programme, the schools fruit scheme. I’m not sure you need a strategy because we are talking about some very simple messages – take a bit more exercise, eat a bit better, make sure your children do the same (HC 23 2004, p.46).

Tony Blair and David Cameron also approached obesity primarily on the basis of the choices of individuals although they have both come to recognise the need for government action later. In 2004, Blair was saying ‘I am responsible for many things. But I can’t make people slimmer’ (Boseley 2014, p.17) in a striking parallel to Cameron who noted the following in 2008:

We talk about people being ‘at risk of obesity’ instead of talking about people who eat too much and take too little exercise. We talk about people being at risk of poverty or social exclusion: it’s as if these things – obesity, alcohol abuse, drug addiction – are purely external events like a plague or bad weather. Of course circumstances – where you are born, your neighbourhood, your school, and the choices your parents make – have a huge impact. But social problems are often the consequence of the choices people make (quoted in Boseley 2014, p.295).

As an example of many official reports which focused on the growing problem of obesity, a House of Commons Health Select Committee report in 2004 raised the question ‘Gluttony or Sloth?’, again referring to individual failings. In the meantime, insights from behavioural economics have also started to be frequently discussed in relation to policy. Discussion papers prepared for the Cabinet’s Office under Labour governments have highlighted the contributions that these insights can make to increasing the effectiveness of government policy, at the same time noting that new policies would complement rather than replace conventional tools such as regulation or even taxes (Dolan et al. 2010, 77; Halpern et al. 2004, 45). Despite growing emphasis on the behaviour of individuals, this approach still leaves scope for the structural factors underlying obesity to be addressed through more interventionist measures alongside behavioural policies.

On the other hand, the Behavioural Insights Team (BIT), set up by David Cameron in 2010 to redesign government policy by applying insights from behavioural economics, has focused on them more specially in terms of nudge. In a first report, the team was this time contrasting new policies with other tools as they referred to ‘reducing regulatory burdens on business and society, and achieving its policy goals as cheaply and effectively as possible’ as a major advantage (BIT 2010, 4). The practical examples that they brought up in the area of obesity were also concerned with the design of shopping trolleys to increase the consumption of fruits and vegetables, and the use of a popular TV show for children to encourage them to eat healthily and be active (Bit 2010, 14-15). This approach, especially when presented as an alternative to conventional and generally more interventionist policy tools, both embodies and reinforces individual choice-based perceptions of obesity that have already been dominant. It also reflects a very narrow understanding of choice environment disregarding many structural factors behind obesity.

Nevertheless, it should be noted that there has indeed been growing recognition of complex determinants of obesity in policy debates in the UK. Perspectives which reflected both individual and structural factors have come from experts and public agencies recently. For example, the obesity report, which was prepared as part of a series of science-led reports set up under the Foresight programme by the Labour Government (1997-2010), clearly understood the role of structural factors:

The pace of the technological revolution is outstripping human evolution and, for an increasing number of people, weight gain is the inevitable – and largely involuntary – consequence of exposure to a modern lifestyle. This is not to dismiss personal responsibility altogether, but to highlight a reality: that the forces that drive obesity are, for many people, overwhelming (Butland et al. 2007, 5).

As the Foresight report then pointed out:

The deceptively simple issue of encouraging physical activity and modifying dietary habits, in reality, raises complex social and economic questions about the need to reshape public policy in food production, food manufacturing, healthcare, retail, education, culture and trade. In some respects, the objectives of previous eras, for example, improvements in food availability or opportunities for personal travel, now need reassessment in a time when energy-dense food is ubiquitous and transport choices restrict walking or cycling (Butland et al. 2007, 12).

Public Health England also highlighted the ‘environmental drivers of poor diets’ in its recent report which focused on the need to reduce sugar intake and potential actions to this end:

No single action will be effective in reducing sugar intakes. This is too serious a problem to be solved by approaches that rely only on individuals changing their behaviour in response to health education and marketing, or the better provision of information on our food. The environmental drivers of poor diets we face are just too big (PHE 2015, 7).

These perspectives indicate a concern with the factors that influence human behaviour beyond the immediate presentation of choices, hence a certain broadening of the choice environment that is taken to be influential upon the decision-making processes of individuals. The recognition of structural factors underlying obesity has had little impact on the specific policy measures that are adopted or proposed, however. The solutions to the problem are still framed overwhelmingly in terms of individual behaviour with almost no emphasis on the regulation of food production or tackling of other structural determinants. The Foresight report was used to provide the evidence base for obesity policy with the aim for the British Government to be the first government in the world to reverse the trend in obesity. Yet, the policy that developed from the Foresight report continued to underestimate supply side issues. For instance, the policy document Healthy Weight, Healthy Lives noted:

To help fulfil this ambition, the Foresight experts suggested that Government could best focus its actions in five main policy areas – to promote children’s health; to promote healthy food; to build physical activity into our lives; to support health at work and provide incentives more widely to promote health; and to provide effective treatment and support when people become overweight or obese (HM Government 2008, p.xii).

Among these areas, the promotion of healthy food was indeed about the industry, yet this constituted quite a minor part of the report, prioritising voluntary codes and remaining confined to existing restrictions on advertising to children. Moreover, only £140 million was committed to the promotion of cycling and £75 million to advertising targeted at parents over three years, which is far outweighed by the advertising budget of the food and drinks industry. The policy thus remained focused on individual choice and was often designed, implicitly or explicitly, in behavioural terms, reinforcing the moral discourse around obesity. One of the most telling paragraphs in Healthy Weight, Healthy Lives said:

At the individual level, we will build up our knowledge of which interventions are most effective in encouraging individuals and families to change their behaviour. We will provide resources to pilot and evaluate a range of different approaches to encouraging healthy living. For example, we will look at using financial incentives, such as payments, vouchers and other rewards, to encourage individuals to lose weight and sustain that weight loss, to eat more healthily, or to be consistently more physically active (HM Government 2008, p.24).

In terms of the role of the industry, the prioritisation of voluntary action is also visible in other policy initiatives such as the Public Responsibility Deal. The flagship of the public health strategy starting with the Coalition government, this consists of the industry pledging to voluntary health improvements to its products and restrictions on marketing to children. The official programme description on the Public Responsibility Deal website again reflected the centrality of choice as it said: ‘Too many of us are eating too much, drinking too much and not doing enough physical activity. Creating the right environment can empower and support people to make informed, balanced choices that will help them lead healthier lives’. The businesses were expected to contribute to the creation of this environment voluntarily. However, the limitation of the Deal to the companies which choose to get involved and the general exclusion of small local businesses which equally sell high calorific food have constituted substantive challenges for its effectiveness (Boseley 2014, 111-112).

Finally, social marketing campaigns such as Change4Life are by definition centred around the idea of nudging people towards better choices, and are usually supported and even financed by the industry. Under the Coalition government, for example, the then Health Secretary Andrew Lansley was urging the drinks industry to get involved in Change4Life and help expand the health message, implicitly presenting this as a quid pro quo for not having stricter regulation on marketing (*The Guardian*, 7 July 2010). Similarly, the recent One You campaign, in which people are offered personalised lifestyle advice according to their results from an online health quiz, is supported by many public and commercial partnerships. Central to these measures is a reliance on individuals making decisions about eating and exercise, thereby reproducing the choice-based perceptions of obesity. This is also illustrated by one of the main highlights in the launch of One You, which was the statement that ‘around 40% of all deaths in England are related to behaviour’ (PHE 2016). Everyday habits and behaviours responsible for these deaths included, among others, eating too much unhealthy food and not being active enough, and this highlight is certainly interesting in terms of how a line can be drawn between individual behaviour and the broader environment that shapes it.

In this policy context, the decision by the Conservative government to introduce a tax on sugary soft drinks in 2016 appears paradoxical as this is an intervention which clearly goes beyond the narrowly-defined behavioural policies that have so far been dominant. It is possible to note that there has been increasing political pressure upon the government to take action to reduce sugar consumption recently, with the introduction of a so-called ‘sugar tax’ being suggested by many different groups that worked on obesity, from the House of Commons Health Committee (HC 465 2015) and Public Health England (PHE 2015) to various civil society actors such as the Obesity Health Alliance. Groups such as Action on Sugar, which are also part of the latter alliance, were successful in changing the nature of the debate in relation to sugar and obesity and became an effective epistemic community using expertise to force the government to make a significant change in its policy on taxation and food (*Financial Times*, 12 February 2016). Concerns over the scale and cost of the problem were used to push through a change that was previously rejected. There was also public support for a tax on drinks with added sugar, with 55% reported to be in favour of such a measure and only 36% opposed to it (Bhimjiyani and Knuchel-Takano 2016, p.2).

The sugar tax can indeed be expected to have some positive impact on obesity outcomes based on existing studies. Evidence from food and drink taxes implemented in other countries and modelling exercises show that they are effective in reducing purchases (Powell et al. 2013; Thow et al. 2014; Cornelsen and Corriedo 2015; Colchero et al. 2016) and there is a well-documented association between the consumption of sugar-sweetened beverages and body weight (Vartanian et al. 2007; Hu 2013). Obesity and related health outcomes are thus likely to improve if a sustained decline in consumption is achieved through the sugar tax. The specific tax introduced in the UK is a narrow-based tax on sugary soft drinks rather than a broad-based tax on sugar. With soft drinks accounting for around 17% of the added sugar in household purchases on average, the tax will target only a fraction of added sugars consumed, but it is a well-targeted tax from several perspectives and has the advantage of not having an adverse impact on other aspects of diet quality (Griffith et al. 2016). Moreover, as an excise tax depending on the amount of sugar, it avoids the risk of encouraging bulk buying unlike price-based sales taxes (Jou and Techakehakij 2012).

The shift in the government’s economic management strategy indicated by the imposition of the tax is significant as the previous measures dealing with obesity were much less interventionist and strictly protected the free market. The sugar tax is a deviation from nudge in the conventional sense and even provides some preliminary support to the argument that regulatory measures are more effective with some companies already announcing the reformulation of their soft drink formulas before the tax is implemented (*The Guardian*, 15 November 2016). However, one thing which is more striking from the perspective of obesity policy is the sustained emphasis on individual choice and nudge in relation a tax which is imposed according to certain features of industrial products, hence primarily targeting the production side. This continuity was first exemplified by Public Health England’s comments in response to an enquiry by the Health Committee, in which the tax was portrayed as a way of directing consumption behaviour towards healthier choices rather than encouraging change in the production process:

One thing that came up from the Committee earlier was that this is imposing additional costs on the least advantaged. That is not the point of the tax. *The point of the tax is to nudge people away* from purchasing those things towards purchasing things that are more in keeping with a healthy balanced diet (HC 465 2015, p.30, emphasis added).

The House of Commons Select Committee follow-up report on childhood obesity was later welcoming the tax on similar grounds:

We strongly recommend that manufacturers pass on the differential cost between products with high and low or no-sugar as a result of the levy in order *to help maximise the ‘nudge’ to healthier choices.* Consumers of sugar-free products should not be forced to subsidise higher-sugar drinks, which would in effect be the case if manufacturers do not pass on the price differential between these products arising from the levy. We recommend that the Government should develop and be prepared to implement measures to ensure that this price differential is clear in the price paid by consumers for high-sugar drinks (HC 928 2017, 3, emphasis added).

More interestingly, BIT also embraced the sugar tax from the perspective of behavioural insights in policy. While acknowledging that a tax does not fit into the classical definition of nudge, a commentary from the BIT highlighted the positive role that the sugar tax is likely to play in encouraging behavioural change (Harper et al. 2016). In this perspective, the impact of the tax would be realised not only by incentivising producers to reformulate their products and generally decreasing sugar levels in soft drinks, but also by signalling the bad health effects of sugary drinks to the consumers. The government’s childhood obesity strategy document, published after long delays, has continued this double emphasis by directly referring to the two aims of initiating change in the production process and individual behaviour: The tax was ‘designed to encourage producers to reduce the amount of sugar in their products and to move consumers towards healthier alternatives’ (HM Government 2016, 4).

Alongside the previously announced sugar tax, the strategy document also called for a more comprehensive sugar reduction programme in everyday products, acknowledging the impact of the composition of products on people’s diets. Thereby it has arguably shown awareness of structural factors related to obesity; however, it reverted to prioritising the voluntary participation of the industry in terms of policy. ‘Alternative levers’ were only mentioned as a future possibility in case there is not enough progress through voluntary action (p.5). The remaining items in the childhood obesity strategy focused on improving people’s choices through measures such as increased availability of healthy options in the public sector to set an example and more accessible labelling, which are in line with nudge in a narrower sense. Finally, the encouragement of physical activity received special attention, supported by the allocation of part of sugar tax revenues to school sports.

A former draft of the strategy revealed by Channel 4 shows that several parts addressing structural factors behind obesity in a broader and more interventionist way were indeed cut in the version that was published. These included measures on requiring food outlets to put calorie information on their menus, limiting the encouragement of the consumption of unhealthy foods by supermarkets through price promotions and product placements, and extending the regulations on TV advertising (*Channel 4 Dispatches*, 31 October 2016). Moreover, the following part, which clearly recognised the insufficient role of exercise in itself and the need to prioritise the problems in prevalent diets was removed from the published version: ‘We must recognise that increasing the amount of exercise children undertake will not in itself solve childhood obesity. The number of calories we can burn through physical activity is dwarfed by the amount we can easily consume through food’. It is possible to say, therefore, that the avoided parts would have meant a broader understanding of environmental influences on behaviour than the published version as they acknowledged the role of marketing practices on shaping behaviour and the centrality of food environments for obesity outcomes.

The process behind these revisions is complex, and involves both increasing resistance from the industry after the announcement of the sugar tax (*The Guardian*, 16 August 2016) and a change of government between the date of the draft and the publication of the current strategy. On the one hand, the measures that have been cut were mostly about marketing and promotions, concerning a much wider array of products than a narrow-based sugar tax, hence likely to encounter even more political opposition. On the other hand, the published version of the strategy created frustration among many groups that work on obesity, with experts and civil society expressing significant criticisms. The comments of a Department of Health spokesperson in the Channel 4 documentary indicates that this might be an attempt to achieve a certain balance on the part of the government, as he said that they have ‘intentionally taken a careful and measured approach which will reduce obesity’, emphasising that they are taking ‘bold action’ through the sugar tax and there are some restrictions on advertising and promotion already in place (*Channel 4 Dispatches*, 31 October 2016). As such, the strategy constituted more of a continuity with the policies before the introduction of the sugar tax, which arguably facilitated the removal of certain broader measures from the draft version.

One key point illustrated by these developments in obesity policy is how nudge has become the dominant approach to policy although there have been some changes in its interpretation over time. First, the transition from Labour government to the Conservative-Liberal coalition in 2010 corresponds to an important shift in emphasis from nudge as an explicitly complementary policy tool to one that is rather presented as an alternative to more structural measures. This has also meant that the limitations of nudge have become more pronounced because such a dichotomy between nudge and other policy tools made it increasingly difficult to address the structural factors behind obesity. What we have seen as a general trend here is a shift in the policy from a focus on structural factors in the Foresight report to the actual policies that have been implemented in the following years avoiding policies that challenge economic interests.

The introduction of a tax on some sugary drinks by a Conservative government in this context seems paradoxical in the first instance. On the one hand, this has interestingly proved that behavioural insights can indeed be used to intervene in the choice environment in a more comprehensive way than narrowly-defined nudges. However, whilst in principle the sugar tax challenges economic interests, the evidence so far is that its effect is very limited on both consumers and producers (IEA 2015). Also the childhood obesity strategy which followed shows that any structural measures are very limited and the sugar tax remains a stand-alone measure within the overall obesity policy in the UK today. The remaining policies cannot effectively address the structural factors that underlie the rise of obesity due to political costs, and the interventions centred on the logic of nudge contribute to normalising the lack of more structural reform.

**Conclusion**

The case of obesity demonstrates the limits of nudge-influenced policy in the case of complex social/health problems. Despite starting from the assumption that human choices are highly malleable and not perfectly rational, nudge limits the choice environment which has an impact on their decisions to the immediate architecture of choices and fails to take account of the overall social, economic and political architecture. Consequently, nudge-based measures are inadequate in effectively tackling increasing obesity rates on their own, and are not easily combined with more interventionist measures without violating the freedom of choice, which is a central both to nudge theory and the dominant free market approach. However, free markets are themselves an important factor behind obesity because the food market can be used to sell highly calorific food in the context of declining physical activity. Whilst governments spend relatively small amounts on exhorting health behaviour, profits from highly calorific processed options are substantive and companies today spend vast amounts to advertise them. It is easy to consume calories almost unconsciously and takes conscious effort to expend them, and healthier lifestyles are even more difficult to achieve for people on low incomes and living in socially deprived areas. Relying on voluntary agreements with the industry to avoid intervening in the market in this context means leaving the interests responsible for producing high calorie/low cost food to reinforce the public health message, which is hardly successful.

An examination of the policy debate and developments around obesity in the UK illustrates the ways in which the legitimacy of free markets and light regulation are reproduced through a policy based on the logic of nudge, which places the blame for obesity on individual weakness rather than the nature of food production and the market. Whilst the structural drivers of obesity are increasingly recognised, concrete measures are still predominantly based on behavioural policies trying to use incentives and norms as mechanisms for changing individual behaviour. Even the recently announced sugar tax, which constitutes a significant deviation from the previous non-interventionist approach, was partly justified on the basis of nudge and has not been followed by similar broader measures. Indeed, nudge-based polices are useful to government within the context of a liberal and free market policy domain. Firstly, they are often relatively low cost – they focus policy on changing choices rather than large scale structural changes – from new bike lanes to reducing inequality which may have an impact on obesity rates. Second, they do not challenge economic interests by pushing costs on food producers to change the type of food they produce. High sugar and fat foods are usually cheap to produce and easy to store, making them convenient for international trade. Third, they focus individual, moral behaviour rather than government action, so do not challenge liberal notions of choice and markets. Nudge-based polices allow governments to take action and to respond problems but without challenging existing social, political and economic relationships. This may be useful in some areas and there are many examples of successful nudge policies; however, in the case of obesity this approach has key limitations because the surrounding choice environment is complex and multi-dimensional. Obesity is related to the production of food, how food is consumed, level of physical activities and scales of deprivation, and hence is unlikely to be resolved by focusing on individual moral actions. While the sugar tax shows that behavioural insights have the potential to provide ground for expanding the scope of policies, so far they have rather been used to reinforce the sense of individual responsibility, which in turn decreased the viability of measures capable of tackling this environment more broadly. Indeed, what the sugar tax illustrates is that behavioural measures are rarely successful on their own.

Behavioural policies have widely been seen as a panacea in terms of providing a low cost and effective policy instrument. They have been influential largely because they have adapted a public choice conception of action – we are rational actors but our choices are framed. The reorientation of framing is seen as effective at producing policy change without major interventions either in terms of finance or bureaucracy. Consequently, behavioural policies fit well with governance in times of austerity. However, this approach ignores two fundamental issues. First, humans are rational but not always in a utility maximising way. They are able to reflect upon, and vary, their responses in relation to the choice architecture. Second, the choice architecture in areas of such as obesity are much broader than behaviouralist suggest. So replacing sweets with healthy choices at supermarket checkouts may have a marginal impact on purchasing behaviour, but that impact will be limited if there is a strong economic incentives for food producers to create foods with high sugar and fat content with high profit margins. Behaviouralism focuses on the immediate and short term choice architecture of actors and not the broader social, economic, and political environment within which decisions are made. Consequently, any behavioural policy changes for a major social problem like obesity are likely to have less effect that advocates claim.

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