

'Complexity' as a rhetorical smokescreen for UK public health inaction on diet

Savona N
Thompson C
Smith D
Cummins S

Corresponding author

Dr Natalie Savona
London School of Hygiene and Tropical Medicine
15-17 Tavistock Place
London WC1H 9SH

natalie.savona@lshtm.ac.uk

<https://orcid.org/0000-0002-3006-3681>

Dr Claire Thompson
University of Hertfordshire

Dr Dianna Smith
University of Southampton

Professor Steven Cummins
LSHTM

Key words

Diet, public health, complexity, health policy, inequalities

ABSTRACT

'Complexity' is theorised as a characteristic of modern food systems that poses a challenge to improving population diets. This paper seeks to explore the discursive deployment of 'complexity' in the context of public health. Doing so helps inform a more critical assessment of commercial and political determinants of health, and of 'complexity' as a prevailing frame for public health issues. Qualitative methods were used to explore 'responsibility' for healthy eating in the food system in the United Kingdom. Discourse analysis was conducted on corporate and government documents, and interviews with industry and government stakeholders. The aim was to examine implications of 'complexity' within discourses of dietary public health. 'Complexity' was used not only to characterise dietary public health problems but also as a rhetorical device in public health narratives. It performed two main discursive functions: firstly, to represent diet-health problems as so multi-layered and difficult that they are intractable. Secondly, and despite this acknowledged complexity, to deflect from food system actions for improving diet to 'simpler' and non-food interventions, by industry and government. These uses of 'complexity' serve to attribute primary responsibility to individuals for dietary choice and to obscure inaction by government and industry, who have most control over the determinants of those choices. In short, 'complexity' can be used discursively to generate a smokescreen masking policy inaction in addressing public health problems.

INTRODUCTION

Efforts to reduce the prevalence of diet-related conditions such as obesity and cardiovascular disease are failing globally (Afshin et al., 2019; Ng et al., 2014) and prevalence has a marked social gradientⁱ. To mitigate these public health problems, efforts are made to characterise and understand the complexity of the food system, the relationships between the actors within it, and how these can affect food choice (Hawkes, Russell, Isaacs, Rutter, & Viner, 2017). Additionally, increasing attention is given to the role of corporate and political practices in public health policy and outcomes (Moodie et al., 2013) and the need to examine policy, power and their link to individuals' health behaviours (Greer, Bekker, Azzopardi-Muscat, & McKee, 2018; Nolte, 2018). Acknowledging and exploring the complexity of public health problems can elucidate the challenges faced by researchers, policy makers and practitioners and help guide appropriate responses. Indeed, complex systems theory offers a useful framework for conceptualising and tackling such multifactorial, widespread health issues (Knai, Petticrew, Mays, et al., 2018; Rutter et al., 2017). In what has been called the 'complexity turn' (Salway & Green, 2017), the validity of this approach is increasingly promoted in work on health inequalities, health services research and public health issues (Diez Roux, 2011).

Debates about the complexity of public health problems are therefore valid and useful. 'Complexity' is, however, both a descriptor and a theory: as a noun – ascribing complexity to a problem, system or issue – it is distinct from applying complexity theory to said issue. The two are not synonymous. And yet, they are frequently and problematically conflated, posing a significant barrier to building consensus and taking effective action on population dietary health. This inconsistency is evident in the way that the description of dietary public health as a complex problem is not routinely factored into proposed policy solutions. For example, the United Kingdom (UK) guidance for *Health matters: obesity and the food environment* states that obesity is a complex problem with many drivers, including behaviour, environment, genetics and cultureⁱⁱ yet the solutions proposed, such as improving food labelling (DoH, 2010, 2016) or suggesting people 'move more' as exemplified in Public Health England's (PHE) Change4Life campaignⁱⁱⁱ are linear and dependent on individual-level behaviour change. Such actions, interventions and policies are not commensurate with the complexity of the food environment and other factors that comprise the complex determinants of diet, and they may contribute to health inequalities (Adams, Mytton, White, & Monsivais, 2016).

These inconsistencies suggest that it is critical to examine the way the term 'complexity' features in the discourse around dietary public health; failure to do so risks stifling effective policy responses to diet-related poor health. There is mounting evidence that industry and political interests drive strategies to frame the discourse around such issues, to affect policy-making and to sow uncertainty about the role of their products in health outcomes (Mialon, Mialon, Calixto Andrade, & Jean-Claude, 2019; Mindell, Reynolds, Cohen, & McKee, 2012). The way an issue is framed affects the discourse around it and thereby what is considered acceptable in policy (Lakoff, 2014); researchers have examined, for example, the way responsibility for obesity is framed in the media, to what degree it depends on individual behaviour change or system-level responses (Barry, Brescoll, Brownell, & Schlesinger, 2009). At the same time, the increasing acknowledgement of 'complexity'

related to obesity and dietary health issues has spurred calls for them to be framed as ‘systemic’ problems (Khayat-zadeh-Mahani, Ruckert, & Labonté, 2018).

To date, there has been little investigation of how narratives of complexity are employed and the role that such discourse can play in political or corporate policy on diet and health; that which has (Petticrew et al., 2017), did not do so using new, primary data that includes interviews with representatives of the food industry, as this paper does. The data presented here comes from a qualitative study of actors, actions and responsibilities in the UK food system. At a time when complexity *theory* is gaining traction in public health work, this paper explores how the *term* ‘complexity’ features in discourses about healthy eating, the discursive functions it serves, and the potential impact on policy. Such an undertaking is important in enhancing understandings of the normative barriers and facilitators to effective interventions.

METHODS

The data reported here are from a wider study on the concept of responsibility in healthy eating in the UK, and comprise two components: a documentary analysis of corporate (n = 3) and government (n = 5) documents about healthy eating (listed in Table 1); and 18 semi-structured interviews with key stakeholders from the food industry, government and non-governmental organisations (NGO). The data collection was intended to generate narratives from a range of sources, stakeholders and perspectives through the documents and interview transcripts were examined using discourse analysis, informed by a Foucauldian approach (Waite, 2010).

Data collection

Documents

The publications (Table 1) were selected in order to provide a snapshot of explicit government and food industry discourse in the UK on diet and health i.e. not that published by industry ‘front’ organisations or think-tanks with a political slant. The starting point was *Tackling Obesities: Future Choices*, (“The Foresight Report” Butland, 2007) commissioned by the UK government: a seminal publication that was the first UK policy document to explicitly frame obesity – a problem largely related to diet – as a complex problem (Savona, Rutter, & Cummins, 2018). Further selection involved purposive sampling – all documents referred directly to Foresight, obesity, and public health. Food industry publications were selected from manufacturers and retailers that had signed the Public Health Responsibility Deal (PHRD, DoH, 2011, also one of the government documents analysed). The documents were subjected to an initial descriptive, thematic analysis to tentatively explore how the texts constructed and reproduced key concepts around health and responsibility (Hall, 2001; Waite, 2010).

Table 1: Documents analysed

Government			
Tackling Obesities: Future Choices (The Foresight Report)	Healthy Weight, Healthy Lives: a cross-government	Healthy Lives, Healthy People: Our strategy for public health in England	Public Health Responsibility Deal (2011)

(2007)	strategy for England (2008)	(2009)	Healthy Lives, Healthy People: A call to action on obesity in England (2011)
--------	-----------------------------------	--------	--

Industry

Industry in action on public health: Stepping up to the plate <i>Food & Drink Federation</i> (2011)	Corporate Responsibility Report <i>Tesco</i> (2011)	PepsiCo Health Update <i>PepsiCo</i> (2011)
--	---	--

Semi-structured interviews

Interviews were conducted with representatives of industry, government, NGO as well as public health academics with expertise in dietary public health policy. Representatives from these broad sectors were purposively selected to probe the diverse and complex range of interests in this field. The aim was to obtain elite and expert accounts of the drivers of dietary health policy, the nature of the food system they operate in, and the role of the actors within it. Recruitment involved criterion, opportunistic and snowball sampling (Bradshaw & Stratford, 2010) for example a colleague introduced me to a senior executive at a food and drink multinational company who in turn proposed another executive he knew; two interviewees responded to 'cold-call' emails. Eighteen participants were interviewed: four from government (health and Cabinet office), six from industry (multinational retailer and manufacturers and a trade body) four NGO executives (health, food and consumer rights advocates) and two academics. Participant details will not be reported, to avoid making them identifiable.

Data analysis

Interviews were transcribed verbatim and, alongside the documents, examined using discourse analysis. Initially, the transcriptions were read and re-read using qualitative thematic analysis (Seale, 2004) to identify first codes and then themes. The data set was examined for both emergent themes and anticipated themes that were considered relevant *a priori*, based on a literature review and research aims (Ziebland & McPherson, 2006). Complexity itself emerged as an inductive theme amidst discussions on responsibility for healthy eating and then was further explored and divided, as shown in the results.

A discourse analysis seeks to examine the ways in which social concepts and identities are constructed and how they are reproduced through discourse; it proposes that the constitution of language and knowledge be subjected to questioning because of the recognition that they are conditional, uncertain and often involve power relations (Wetherell, Taylor, & Yates, 2001). As such, the data set is examined to see how the discourse creates an effect, rather than a more interpretive approach which deliberately highlights and contrasts different perspectives. The discourse analysis used in this research drew loosely on the work of Foucault for example: looking for evidence of an inter-relationship between discourses, identifying discursive strategies used, looking for the

absences, silences, 'rupture and resilience' and asking how they work to persuade and create effects of 'truth' (Carabine, 2001; Waitt, 2010).

RESULTS: 'Complexity' as a smokescreen

'Complexity' as a short-hand for (too) difficult to confront

During the analysis, 'complexity' emerged as a term which was used to cast the problem of poor dietary health, particularly obesity, as complex to the point of near-paralysis. 'Complexity' was used as a descriptor to explain why attempts to address diet-health issues were largely problematic and unsuccessful. Indeed, the task of getting the public to eat more healthily was described as

the 10-billion-dollar question
(international food manufacturing company executive)

Such a depiction of hyperbolic complexity works discursively to create an effect of 'truth' that individual behaviour change is the solution to unhealthy diets, undermining the need for systemic changes or corporate responsibility for dietary health. It suggests that solutions to this 'complex' problem are hugely challenging, implying discursively that they are unattainable.

In the *Healthy Weight Healthy Lives* report, the complexity of obesity is emphasised by likening it to climate change and calling for society-wide consensus as the only way of effectively tackling the issue,

...the causes of excess weight demonstrates that, like climate change, tackling this problem is complex and multifaceted, involving individuals, communities and industry as well as Government. It is clear that Government action alone will not be enough.
(HWHL p5)

As can be seen above, 'Government' is listed last among the parties that must be involved in the solution and prefixed by 'as well as', a discursive strategy that is silent on the relative ability of government to take action in the food system compared with individuals, and its power to regulate businesses. Additionally, as the quote below suggests, the 'complexity' of the problem was viewed as a key stumbling block to leadership and action from government,

If you've got a problem, which is everybody's problem, it also becomes nobody's responsibility. And that's the real, real danger.
(public health academic)

This participant raised the idea that effective interventions on diet have reached an impasse – whereby the complexity of the problem leads to a dissipation of responsibility and a lack of accountability.

The contradiction of simple solutions to 'complex' problems

While the ‘problem’ of poor dietary health was consistently depicted as complex, solutions presented were often incommensurately simple, demonstrating an implicit rupture in the discourse of complexity. On the one hand, inaction or lack of success is mitigated or negated by the ‘complexity’ of the problem. On the other hand, solutions offered are strikingly linear and simple – such as telling people to eat less and take more exercise or listing calorie content on packaged goods, assuming that that knowledge drives choice amidst other determining factors such as cost or convenience of the food. For example, the analysed PepsiCo report stated that,

We want to strengthen efforts to achieve public health goals and the ‘energy in, energy out’ balance which is critical to maintaining a healthy lifestyle in an increasingly sedentary environment.
(PepsiCo p3)

Though ‘energy in, energy out’ is, indeed, the physiological foundation of energy imbalance, it is widely accepted that getting the balance right for a healthy, stable weight is not straightforward. This rupture was resolved in narrative by positioning ‘simple’ solutions at the individual-level, framing members of the public – rather than other actors – as those that needed to take action. Also notable is the mention of ‘sedentary environment’ i.e. the ‘energy out’/exercise element of energy balance. Discursively, this emphasis serves to absent the ‘energy in’ to which PepsiCo’s products contribute.

A further example of responsibility placed on individuals to maintain healthy lifestyles by using seemingly simple efforts despite the complexity of environmental factors, is demonstrated in the *Public Health Responsibility Deal*, which states that,

The scope of the food network’s activity is wide-ranging and embraces four main areas: information to consumers; content of food; improving the availability of healthy food; and promotion of healthier food choices.
(PHRD p10)

Of the four proposed areas, all but one (content of food) assume linear rationality in food choice. For example, providing consumers with more information puts responsibility on individuals, assuming that they will use that information to make healthy food choices. While the promotion of healthier food choices says nothing of the appeal (be that economic, taste or convenience) of unhealthy ‘choices’. The listing of political and corporate efforts serves to persuade that they are taking action, simultaneously absenting the need for individuals to override the complexity of multiple determinants of diet to benefit from these actions.

In a counter-discourse, many participants observed and critiqued the discrepancy between the complexity of food choice and the contradictorily simplistic efforts to improve population diets. Some interviewees lamented it, commenting that despite the inherent complexity, the debate about dietary public health is often characterised by single-issue factors approached in a piecemeal fashion,

Because it's a complex messy problem, people have complex messy thoughts about it. And there will be knee-jerk stuff that says yes people should keep their snouts out of the trough.....

(public health academic 2)

Indeed this 'messy problem' was described by another contributor as too complex to generate a 'rational response'. The apparent simplicity in many proposed responses silences other factors in the complex food system that affect individuals' food choice, such as cost, taste, convenience and promotions, factors that are under the control of other food system actors. There was an awareness that 'complexity' was being used to excuse inaction; as an interviewee said,

it can be a really complex process. But that doesn't mean the alternative is that government doesn't do anything and just leaves it up to industry.

(consumer campaigner)

Despite these inconsistencies, the policies that stand out as simplistic such as emphasising 'eat less move more' or providing information assuming it is used to make healthier choices persist to create an effect of truth of the benefits of such responses to improve diets.

Government and complexity: a 'balancing act'

Another aspect of the complexity of public health action on poor population diets is that of the government's position. Some saw 'complexity' as only part of the problem – the solutions themselves were a 'balancing act' and involved several sectors, beyond health. Several contributors pointed out that in addition to health, governments have other obligations – priorities, even – such as to the agriculture sector and industry more generally. One interviewee highlights the way health is de-prioritised in policy terms when it comes to decision-making and regulation of the food system – demonstrating the resilience of the depiction of the complexity discourse around diet-health as problematic.

It's a complex process of policies and politics. It's about policies and politics around business, around trade, around agriculture, around health to a lesser extent.

(NGO executive)

While another was more explicit about how public health is a lower priority than the economy,

there are other priorities and economic vitality is an essential priority and there may well be trade-offs.

(public health academic 2)

This respondent and others recognised the importance of commercial success and economic growth and hinted that such 'trade-offs' may be a strategy for overcoming the complexity.

Government and complexity: 'taking the lead'

Another aspect of government's role in the issue is that the complexity is said to require leadership: government was portrayed as the only player in a position to manage it,

It has to be government that takes the lead on this because no one else could. It's such a big, complicated set of issues. No one else would have the kind of power to say 'yes this is how we do stuff'.

(former senior civil servant, Department of Health)

This statement forms a counter-discourse to the 'too complex to manage' rhetoric, constituting government as the overarching entity with power over all aspects of the diet-health nexus, in all its complexity. It demonstrates a rupture in the discourse that diet-health is too hard to manage. This inconsistency was seen elsewhere, suggesting government should act neutrally, because of its responsibility for public health, for mitigating the potential harm from corporate endeavours,

it's about transparency... it's about cutting through all the promotional noise to provide some objective information to help people navigate otherwise a very noisy food environment, which is marketing.

(NGO executive)

This speaker, resigned to corporate practices, placed the imperative on government to take the lead with an overarching handle on the complexity, and keep industry in check. The complexity of the diet-health issue was said to beleaguer government's attempts to address it,

within the discourse people tend to be A, opinionated and B, have an opinion that doesn't acknowledge the complexity of it and C, have a very moral dimension to those opinions.

(public health academic 2)

This interviewee suggests the complexity of the diet-public health issue is not sufficiently accounted for and it can mask a moral, or ideological stance on what action should or should not be taken. Another proposes that in spite of, not because of, the complexity of the problem, government must take the lead,

...regardless of the content, the role of public education programmes is incredibly minimal without, and only really has an impact when the other factors are in place. Whether they happen to be environmental change of a sustained nature and regulatory support. And that's the evidence...

(international food and beverage manufacturing company executive 1)

This speaker thereby hints at a larger role for government, including its powers to affect the nature of the food environment and to influence corporate practices; in other words, one that acknowledges and embraces the complexity rather than using it as discursively useful for government, as a veneer over the ideological agenda behind its actions, or its difficulty in dealing with the complexity. As such, the 'complexity' serves to mask its lack of effective policy behind the smokescreen.

DISCUSSION

As outlined in the sections above, 'complexity' is used to depict the problem of dietary public health (especially in relation to obesity) by a range of sectors from government and corporations to public health practitioners. The implications of framing the issue of dietary public health as 'complex' have been explored in this analysis. 'Complexity' serves to present the problem as too difficult to tackle yet at the same time, these 'complex' problems are presented alongside relatively 'simple' solutions, while the role for government in addressing the problem is characterised as complex too. The combined effect of these contradictory framings is that the term 'complexity' functions discursively to minimise the responsibilities of government and the commercial sector. Specifically, it serves to obscure a lack of action, a lack of effective action or a failure to assume responsibility for acting on the known determinants of diet. In this sense, the term 'complexity' is a rhetorical smokescreen.

The food system-diet interface *is* complex and involves a wide range of sectors (Butland, 2007); this 'complexity' can be discursively constructed as a public health problem so vast that it is insurmountable. The complexity creates 'policy cacophony' (Lang & Rayner, 2007) and can even 'lead to despair and retreat from the problem' (Finewood, Merth, & Rutter, 2010). This study demonstrates the ways in which this sense of chaos or resignation in the face of complex problems is referenced and exploited in discourses of diet in order to implicitly justify inaction and failure on the part of actors with power over the nature of the food system within which individuals make food choices. The heightened discourse of complexity demonstrated by the comparison with climate change serves to distance government from the task of directly tackling the issue and explain away a lack of success thus far. This rhetorical device has been described as 'stake inoculation' (Potter, 1997) – heightening the matter to validate one's stake or position.

Improving diet and diet-related health is seen as so complex that 'nothing can be done', (Petticrew et al., 2017) with the result that there is a retreat to simpler and more politically and commercially palatable solutions as well as a deflection to non-diet responses such as physical activity initiatives. This represents something of a discursive dilemma (Potter, 1997) but one that is persuasive in diverting attention from corporations' role in the 'energy in' side of energy balance. It has a strategic function in the discourse, silencing the role of the food and drink products that provide the 'energy in'; this discourse was promulgated by the Global Energy Balance Network, funded from 2014-2015 by, amongst others, Coca Cola (Huehnergath, 2015). It is arguable that the 'complexity' of energy balance contributes to problematic responses. This could be explained by the view that 'one major function of dominant discourse is precisely to manufacture such consensus, acceptance and legitimacy of dominance' (Van Dijk 2001, p.302). As such, the term 'complexity' serves to excuse and validate inaction by government and industry: it is a commercially and politically expedient label.

This study adds to the growing body of research into corporate strategies to deflect responsibility for their role in harmful behaviours within the food, tobacco, alcohol and gambling industries (Knai, Petticrew, Douglas, et al., 2018; Petticrew et al., 2017) and how the corporate sector uses certain, often common, strategies to influence the way public health debates are framed (Moodie, 2017; Nguyen, Glantz, Palmer, & Schmidt, 2019; Nixon et al., 2015; Scott, Hawkins, & Knai, 2017). Commercial interests use many different

strategies to thwart regulation or to point towards interventions that do not damage their interests (Gilmore, Savell, & Collin, 2011; Knai et al., 2015; Petticrew et al., 2017). This paper demonstrates how the discourse of complexity can be exploited to the same end. While the food system has been described and analysed as a complex system elsewhere (Jebb, 2012; Story et al., 2009), the discursive implications of describing the matter as complex have not been questioned.

Little work has been done in primary data on the way that the 'complexity' of public health problems can be misappropriated by those with vested interests in the system. The use of discourse analysis in this study has added a dimension to the findings beyond merely presenting themes in the data. It helps unmask some of the ways 'complexity' may be discursively constructed and reproduced to shore up certain positions, actions and inaction. Academics (Petticrew et al., 2017) have discussed the use of the 'complexity' discourse, particularly as it is used by industry, but this has only been in 'commentary' form, and has been accused of "cherry-picking" data (Petticrew, personal communication). In contrast, the research presented here involved primary data that was analysed systematically using discourse analysis. The findings in this paper are therefore contextualised theoretically, including a political science perspective, thereby situating the use of the complexity discourse in relation to issues of power. Additionally, the paper by Petticrew et al. focussed on identifying the misuse of complexity rather than acknowledging in detail that policymakers do legitimately need to navigate such complexity. The discursive production of the notion of 'complexity' has been questioned here because it is contingent, ambiguous and suggests power relations are at play.

Examining how 'complexity' was discursively deployed exposes it as a justification for calls for 'joint' responses to public health problems and as a way of obfuscating notions of power, stake and conflict (Potter, 1997). It has been suggested that 'narratives help decision makers to fill confidently the gap between ignorance and expediency' (Fairhead & Leach, 1997). The term 'complexity' is thereby a useful narrative tool for amplifying the importance of individual-level actions and masking commercial and government reluctance to act effectively in public health policy. It also neatly veils issues of control and financial interest that are inherent in food systems. This study therefore highlights the need to take a more critical approach to understanding complexity (Salway & Green, 2017) particularly amidst its increasing popularity as a frame for public health challenges (Rutter et al., 2017).

Ultimately the idea of complexity is laden with an inherent tension, which is used by multiple stakeholders in the food system for different purposes: it can act as a barrier to change and as a device for inaction as well as a potential call to take more innovative systemic action in the prevention of diet-related public health. Although considering the complexity of diet and other public health issues is essential, researchers and practitioners must be aware that the complexity of the issue can act as a rhetorical smokescreen, to obscure action on the main drivers of dietary behavior and to undermine potentially effective interventions

Acknowledgments

Thank you to: Dr Beth Greenhough, for her considerable input into the ideas in this paper; to

Dr Cécile Knai for extensive comments on the draft manuscript; to Professor Mark Peticrew for his insights, especially relating to what this paper adds to existing literature.

Funding

This work was supported by a PhD studentship to Natalie Savona from Queen Mary, University of London, and The London School of Hygiene and Tropical Medicine.

Declaration of interest

The authors declare that they have no competing interests.

REFERENCES

- Adams, J., Mytton, O., White, M., & Monsivais, P. (2016). Why Are Some Population Interventions for Diet and Obesity More Equitable and Effective Than Others? The Role of Individual Agency. *PLoS Medicine*, *13*(4), 1–7. <https://doi.org/10.1371/journal.pmed.1001990>
- Afshin, A., Sur, P. J., Fay, K. A., Cornaby, L., Ferrara, G., Salama, J. S., ... Murray, C. J. L. (2019). Health effects of dietary risks in 195 countries, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. *The Lancet*, *6736*(19). [https://doi.org/10.1016/S0140-6736\(19\)30041-8](https://doi.org/10.1016/S0140-6736(19)30041-8)
- Barry, C. L., Brescoll, V. L., Brownell, K. D., & Schlesinger, M. (2009). Obesity Metaphors: How Beliefs about the Causes of Obesity Affect Support for Public Policy. *Milbank Quarterly*, *87*(1), 7–47. <https://doi.org/10.1111/j.1468-0009.2009.00546.x>
- Bradshaw, M., & Stratford, E. (2010). Qualitative research design and rigour. In I. Hay (Ed.), *Qualitative Research Methods in Human Geography* (pp. 139–152).
- Butland, B. (2007). *Tackling obesities: future choices. Project report* (2nd ed.). Government Office for Science, London. Retrieved from http://bis.gov.uk/assets/foresight/docs/obesity/obesity_final_part1.pdf
- Carabine, J. (2001). Unmarried Motherhood 1830–1990: A Genealogical Analysis. In M. Wetherell, S. Taylor, & S. Yates (Eds.), *Discourse as data* (pp. 267–310). SAGE in association with The Open University.
- Diez Roux, A. (2011). Complex Systems Thinking and Current Impasses in Health Disparities Research. *Am J Public Health*, *101*(9), 1627–1634. <https://doi.org/10.2105/ajph.2011.300149>
- DoH. (2010). Healthy Weight, Healthy Lives: two years on. Retrieved from http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalaset/dh_114895.pdf
- DoH. (2011). The Public Health Responsibility Deal. London. Retrieved from http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalaset/dh_125237.pdf
- DoH. (2016). *Childhood Obesity: A Plan for Action*. <https://doi.org/10.1210/jc.2004-0284>
- Fairhead, J., & Leach, M. (1997). Webs of Power and the Construction of Environmental Policy Problems: Forest Loss in Guinea. In R. D. Grillo & R. L. Stirrat (Eds.), *Discourses of development: anthropological perspectives*. Oxford: Berg.
- Finegood, D. T., Merth, T. D. N., & Rutter, H. (2010). Implications of the Foresight Obesity System Map for Solutions to Childhood Obesity. *Obesity*, *18*(S1), S13–S16. <https://doi.org/10.1038/oby.2009.426>
- Gilmore, A. B., Savell, E., & Collin, J. (2011). Public health, corporations and the New Responsibility Deal: Promoting partnerships with vectors of disease? *Journal of Public Health*, *33*(1), 2–4. <https://doi.org/10.1093/pubmed/fdr008>
- Greer, S. L., Bekker, M. P. M., Azzopardi-Muscat, N., & McKee, M. (2018). Political analysis in public health: middle-range concepts to make sense of the politics of health. *European Journal of Public Health*, *28*(suppl_3), 3–6. <https://doi.org/10.1093/eurpub/cky159>
- Hall, S. (2001). Foucault : Power , Knowledge and Discourse. In M. Wetherell, S. Taylor, & S. Yates (Eds.), *Discourse Theory and Practice* (pp. 72–81). SAGE in association with The Open University.
- Hawkes, C., Russell, S., Isaacs, A., Rutter, H., & Viner, R. (2017). What can be learned from the Amsterdam Healthy Weight programme to inform the policy response to obesity in

- England ?, (December), 1–30.
- Huehnergath, N. F. (2015). Emails Reveal How Coca-Cola Shaped The Anti-Obesity Global Energy Balance Network. *Forbes*. Retrieved from <https://www.forbes.com/sites/nancyhuehnergath/2015/11/24/emails-reveal-how-coca-cola-shaped-the-anti-obesity-global-energy-balance-network/>
- Jebb, S. A. (2012). A system-wide challenge for UK food policy. *BMJ*, *344*, e3414–e3414. <https://doi.org/10.1136/bmj.e3414>
- Khayat-zadeh-Mahani, A., Ruckert, A., & Labonté, R. (2018). Obesity prevention: co-framing for intersectoral “buy-in.” *Critical Public Health*, *28*(1), 4–11. <https://doi.org/10.1080/09581596.2017.1282604>
- Knai, C., Petticrew, M., Douglas, N., Durand, M. A., Eastmure, E., Nolte, E., & Mays, N. (2018). The Public Health Responsibility Deal: Using a Systems-Level Analysis to Understand the Lack of Impact on Alcohol, Food, Physical Activity, and Workplace Health Sub-Systems. *International Journal of Environmental Research and Public Health*, *15*(2895), 1–14. <https://doi.org/10.3390/ijerph15122895>
- Knai, C., Petticrew, M., Durand, M. A., Eastmure, E., James, L., Mehrotra, A., ... Mays, N. (2015). Has a public–private partnership resulted in action on healthier diets in England? An analysis of the Public Health Responsibility Deal food pledges. *Food Policy*, *54*, 1–10. <https://doi.org/10.1016/j.foodpol.2015.04.002>
- Knai, C., Petticrew, M., Mays, N., Capewell, S., Cassidy, R., Cummins, S., ... WEISHAAR, H. (2018). Systems Thinking as a Framework for Analyzing Commercial Determinants of Health. *The Milbank Quarterly*, *96*(3), 472–498. <https://doi.org/10.1111/1468-0009.12339>
- Lakoff, G. (2014). Framing 101: theory and application. In *Framing 101 : how to take back public discourse* (pp. 1–29). Chelsea Green Pub Co.
- Lang, T., & Rayner, G. (2007). Overcoming policy cacophony on obesity: an ecological public health framework for policymakers. *Obesity Reviews*, *8*, 165–181.
- Mialon, M., Mialon, J., Calixto Andrade, G., & Jean-Claude, M. (2019). ‘We must have a sufficient level of profitability’: food industry submissions to the French parliamentary inquiry on industrial food. *Critical Public Health*, 1–11. <https://doi.org/10.1080/09581596.2019.1606418>
- Mindell, J. S., Reynolds, L., Cohen, D. L., & McKee, M. (2012). All in this together: the corporate capture of public health. *BMJ (Clinical Research Ed.)*, *345*(dec17_1), e8082. <https://doi.org/10.1136/bmj.e8082>
- Moodie, R. (2017). What public health practitioners need to know about unhealthy industry tactics. *American Journal of Public Health*, *107*(7), 1047–1049. <https://doi.org/10.2105/AJPH.2017.303861>
- Moodie, R., Stuckler, D., Monteiro, C., Sheron, N., Neal, B., Thamarangsi, T., ... Casswell, S. (2013). Profits and pandemics: Prevention of harmful effects of tobacco, alcohol, and ultra-processed food and drink industries. *The Lancet*, *381*(9867), 670–679. [https://doi.org/10.1016/S0140-6736\(12\)62089-3](https://doi.org/10.1016/S0140-6736(12)62089-3)
- Ng, M., Fleming, T., Robinson, M., Thomson, B., Graetz, N., Margono, C., & Mullany, E. C. (2014). Global, regional, and national prevalence of overweight and obesity in children and adults during 1980–2013: A systematic analysis for the Global Burden of Disease Study 2013. *The Lancet*, *384*(9945), 766–781. [https://doi.org/10.1016/S0140-6736\(14\)60460-8](https://doi.org/10.1016/S0140-6736(14)60460-8)
- Nguyen, K. H., Glantz, S. A., Palmer, C. N., & Schmidt, L. A. (2019). Tobacco industry

- involvement in children's sugary drinks market. *BMJ (Online)*, 364(March), 1–7.
<https://doi.org/10.1136/bmj.l736>
- Nixon, L., Mejia, P., Cheyne, A., Wilking, C., Dorfman, L., & Daynard, R. (2015). "We're part of the solution": Evolution of the food and beverage industry's framing of obesity concerns between 2000 and 2012. *American Journal of Public Health*, 105(11), 2228–2236. <https://doi.org/10.2105/AJPH.2015.302819>
- Nolte, E. (2018). Disentangling the burden of disease in the UK: what now? *The Lancet*, 6736(18), 4–5. [https://doi.org/10.1016/S0140-6736\(18\)32429-2](https://doi.org/10.1016/S0140-6736(18)32429-2)
- Petticrew, M., Katikireddi, S. V., Knai, C., Cassidy, R., Maani Hessari, N., Thomas, J., & Weishaar, H. (2017). 'Nothing can be done until everything is done': the use of complexity arguments by food, beverage, alcohol and gambling industries. *Journal of Epidemiology and Community Health*, jech-2017-209710. <https://doi.org/10.1136/jech-2017-209710>
- Potter, J. (1997). Discourse analysis as a way of analysing naturally occurring talk. In D. Silverman (Ed.), *Qualitative research: Theory, Method and Practice* (pp. 144–160). London: Sage.
- Rutter, H., Savona, N., Glonti, K., Bibby, J., Cummins, S., Finegood, D. T., ... White, M. (2017). The need for a complex systems model of evidence for public health. *The Lancet*, 6736(17), 9–11. [https://doi.org/10.1016/S0140-6736\(17\)31267-9](https://doi.org/10.1016/S0140-6736(17)31267-9)
- Salway, S., & Green, J. (2017). Towards a critical complex systems approach to public health. *Critical Public Health*, 27(5), 523–524.
<https://doi.org/10.1080/09581596.2017.1368249>
- Savona, N., Rutter, H., & Cummins, S. (2018). Tackling Obesities: 10 years on. *Journal of Epidemiology and Community Health*, 72(93). <https://doi.org/10.1136/jech-2017-210121>
- Scott, C., Hawkins, B., & Knai, C. (2017). Food and beverage product reformulation as a corporate political strategy. *Social Science & Medicine*, 172, 37–45.
<https://doi.org/10.1016/J.SOCSCIMED.2016.11.020>
- Seale, C. (2004). Coding and analysing data. In C. Seale (Ed.), *Researching Society and Culture* (pp. 305–321). Sage.
- Story, M., Giles-Corti, B., Yaroch, A. L., Cummins, S., Lawrence Douglas, F., Terry, T. K. H., & LaVonna Blair, L. (2009). Work Group IV: Future Directions for Measures of the Food and Physical Activity Environments. *American Journal of Preventive Medicine*, 36(4), S182–S188. Retrieved from
<http://linkinghub.elsevier.com/retrieve/pii/S0749379709000166?showall=true>
- Waite, G. (2010). Doing Foucauldian Discourse Analysis - revealing social realities. In I. Hay (Ed.), *Qualitative research methods in human geography* (pp. 217–240). Oxford University Press.
- Wetherell, M., Taylor, S., & Yates, S. (2001). *Discourse theory and practice : a reader*. London: SAGE.
- Ziebland, S., & McPherson, A. (2006). Making sense of qualitative data analysis: An introduction with illustrations from DIPEX (personal experiences of health and illness). *Medical Education*, 40(5), 405–414. <https://doi.org/10.1111/j.1365-2929.2006.02467.x>

Table 1: Documents analysed

Government

Tackling Obesity: Future Choices (The Foresight Report) (2007)	Healthy Weight, Healthy Lives: a cross-government strategy for England (2008)	Healthy Lives, Healthy People: Our strategy for public health in England (2009)	Public Health Responsibility Deal (2011) Healthy Lives, Healthy People: A call to action on obesity in England (2011)
--	---	---	--

Industry

Industry in action on public health: Stepping up to the plate <i>Food & Drink Federation</i> (2011)	Corporate Responsibility Report <i>Tesco</i> (2011)	PepsiCo Health Update <i>PepsiCo</i> (2011)
---	---	---

ⁱ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/613532/obes-phys-acti-diet-eng-2017-rep.pdf accessed 18/12/17

http://www.who.int/diabetes/country-profiles/gbr_en.pdf?ua=1 accessed 18/12/17

ⁱⁱ <https://www.gov.uk/government/publications/health-matters-obesity-and-the-food-environment/health-matters-obesity-and-the-food-environment--2#improving-everyones-access-to-healthier-food-choices> accessed 08/02/19

ⁱⁱⁱ <http://www.solihullactive.co.uk/change-4-life/> accessed 08/02/19