Original Article

What do we mean by 'structure' when we talk about structural influences on the social determinants of health inequalities?

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Abstract Understanding and modifying the influence of structural factors on health is one of the core aims of contemporary public health. The currently dominant account in public health treats structure as being synonymous with indicators of social status such as income, education or occupation level. The unequal distribution of these indicators is further treated as the 'fundamental cause' of health inequalities. In this paper we build an account of structure which is grounded in social theory and responsive to the empirical evidence on health inequalities. We start with Bourdieu's model of *habitus* which positions social structures more proximally to the individual and redraws the hierarchy of up-, mid- and downstream influences. Bourdieu's theory does not adequately account for the role of public health interventions in changing attitudes and behaviours and it is particularly ill-suited to explaining the considerable reductions in smoking prevalence seen in industrialised countries. For these reasons we supplement habitus with Foucault's notion of governmentality. Structural influences on health behaviour are understood to combine equally with the myriad individual concerns of daily life. Describing some structures as being 'fundamental causes' owing to their distant position from the individual leads to misunderstanding the crucially important roles of all levels of structure.
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Introduction

It is now well understood that many of the most powerful influences on health are 'structural' in nature; that is, they derive from the social, economic and political structures and are beyond the control of most (if not all) individuals. Low income, high inequality, unemployment and poor education all influence population health in negative ways that exceed the direct consequences of material deprivation (Mikkonen and Raphael, 2010; Marmot Review, 2010). Consistently these effects are also shown to be graded, with average health deteriorating in step with reductions in social position (Begg *et al*, 2008; Braveman *et al*, 2010; Mackenbach *et al*, 2008). The resulting differences in health outcomes between groups have been termed health inequalities. Where these inequalities are avoidable, unnecessary or unfair they are considered inequities (CSDH, 2008). One result of this evidence has been to shift public health away from individual-focused behavioural approaches and towards so-called 'structural approaches' focusing on the fundamental causes of health inequalities. The precise conceptualisation of structure and its deployment within public health discourses remains, however, contested.

Social position, as a determinant of health, is most commonly described in neo-Weberian terms whereby an individual's position is determined by a combination of their places across multiple hierarchies such as income level, occupational position and educational level (Galobardes *et al*, 2006). The unequal distributions of these indicators of social position are described, in the public health literature, as being the 'fundamental' causes or the 'causes of the causes' of health inequity (Link and Phelan, 1995). According to this account – which we refer to as the 'fundamental causes account' – the only truly effective way to combat health inequalities is to reduce the social inequalities they are associated with (Phelan *et al*, 2010; CSDH, 2008). This is not to say that a person's income, occupation or education directly causes their ill health but rather that these are the underlying causes, influencing multiple disease outcomes through multiple risk factors. The more proximal or intermediate causes of ill health – such as tobacco smoking or traffic accidents – may appear to be the causes of health inequality but their differential distribution is, according to this account, merely a manifestation of the unequal effects of social position. If we follow this to its logical conclusion, the task of public health should be, then, to concentrate on improving these fundamental causes and not to focus on the intermediate causes which may change over time without affecting the unequal distribution of population health outcomes.

The fundamental causes account has been challenged for failing to 'reveal the social mechanisms that explain how individuals arrive at different levels of economic, political and cultural resources' (Solar and Irwin, 2007, p. 27). Consequently a deeper conceptualisation of structure is argued to be required, particularly one which treats the 'existence of Marxian relations of class as a real and causally efficacious (generative) mechanism' (Scambler, 2013, p. 146). Rather than treating class as an individual attribute made up of hierarchical indicators, it should be seen as a social product driven by hidden forces such as exploitation (Muntaner *et al*, 2015). We agree with this argument that the measurements of social position upon which social epidemiological research is based are not themselves 'structures' in any true sense (Ng and Muntaner, 2014). The operation of structure may be inferred from their existence but they are properties and effects of structure – they are structur*ed* rather than structur*ing* (Sewell Jr, 1992).

That measurements of inequalities in social position are merely effects of underlying structures raises significant problems regarding causation in social epidemiology. It suggests that the unequal distribution of social resources and the unequal distribution of health outcomes are both caused by the operation of an unmeasured structure – which is essentially the textbook case of statistical confounding (Oakes and Kaufman, 2006).

Neither the Marxian nor the fundamental causes account explains adequately, however, what we take to be the most important social epidemiological finding, namely the significant differences in health and health-related behaviours *within* class or social position groups. By their nature, these accounts group together large swathes of people according to their class or social position, treating them as essentially homogenous in order to highlight differences *between* the classes or positions. In the absence of radical political, social and economic change, however, it is essential to understand what separates those within existing social positions.

In this paper we use tobacco smoking as our example to begin to address questions of structure with regard to the social determinants of health. There is a wealth of epidemiological and sociological data on tobacco smoking – both quantitative and qualitative – that makes such an investigation possible. This evidence points clearly to the many different ways that structural factors and health-related behaviours can interact, leading us to argue for a reconsideration of what structure means for public health. Drawing on the work of Pierre Bourdieu – the currently preeminent structural theorist – we argue that there is a need to consider *more* structure in public health, particularly those structures more proximal to the individual who is making behavioural choices. To this end, we conclude the paper with a new conceptualisation of structure as it relates to health inequalities.

Tobacco Smoking

Tobacco smoking is a major contributor to the global burden of diseases worldwide (Global Burden of Disease Study, 2015) and differences in smoking prevalence between social groups account for between one quarter and one half of observed health inequalities (Martikainen *et al*, 2013; Federico *et al*, 2013). Until the 1950s – when the dangers of tobacco smoking were conclusively demonstrated – there was, however, no social gradient in smoking prevalence (MacLeod and Davey Smith, 2003). At the commencement of the British doctors study, for example, 87 per cent of doctors (generally men of high status) were, or had been, smokers (Doll and Hill, 1954) and consequently, smoking-related diseases like lung cancer were just as high among the privileged as among the disadvantaged.

As the dangers of smoking became publicly known there were large decreases in smoking prevalence across the industrialised world. In Australia smoking prevalence for men was 72 per cent in 1945, dropping to 58 per cent in 1964 and then rapidly falling to 45 per cent by 1969 (Woodward, 1984). Among men, by 1983 a social gradient in smoking prevalence was visible with smoking becoming more prevalent as income level decreased – though this did not extend to the very poorest group (Woodward, 1984). Across all socioeconomic categories, smoking prevalence today is lower than it was in the 1960s but it has declined further in some groups than others.

The current social gradient for smoking among men and women in Australia is displayed in Figure 1 (AIHW, 2014). Twenty-one per cent of people smoke

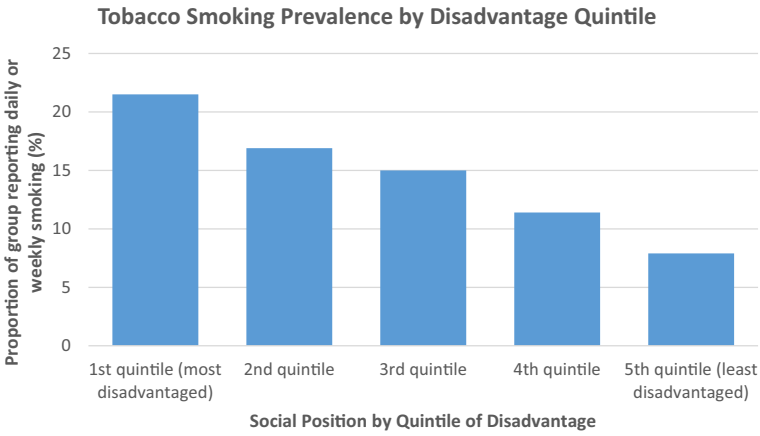

Figure 1: Tobacco smoking prevalence by quintile of disadvantage (AIHW, 2014).

in the most disadvantaged quintile compared to eight per cent in the most privileged quintile. A 'social gradient' – characterised as unhealthiness increasing with disadvantage – is clearly visible in the chart. This result, along with the thousands of others like it, is taken to be the evidence of the influence of social position upon health. That is, since smoking prevalence decreases as disadvantage decreases, disadvantage is deemed as the fundamental cause of smoking inequalities. Whatever the individual reasons a person has for smoking, at a population level the fundamental cause of higher smoking prevalence among the disadvantaged is their lower social position (Schaap and Kunst, 2009). As a result, reducing economic disadvantage is now described as a public health intervention to encourage smoking cessation (Rahkonen *et al*, 2005).

In the most disadvantaged group, it is common to focus upon the higher smoking prevalence than that in the most privileged group. It is equally important to note, however, that almost eighty percent of people in the disadvantaged group do not smoke. For this eighty percent, the structural forces encouraging smoking are of insufficient strength to influence their behaviour. This is important because it suggests that the great majority of people are making decisions about tobacco smoking that run contrary to the predominant structural conditions: disadvantage is not so much a social *determinant* of smoking as a weak social influence.

The question for smoking reduction must then be rephrased from, 'Why are disadvantaged people more likely to smoke than those with privilege?' to, 'Why do people in any social position smoke when so many others in that same social position do not?'

Habitus and the Diversity of Structural Categories

Pierre Bourdieu's theory of *habitus* provides an alternative account of structure that positions structural influences more proximally to individuals (Bourdieu, 1972; Bourdieu and Wacquant, 1992). Habitus is described as an 'internalised form of class condition' (Bourdieu, 1984, p. 101) in the sense that external influences like social class position become internalised as a person's sense of their place in the world. This sense of place manifests as a set of durable and transposable dispositions encompassing everything from political beliefs to aesthetic tastes (Bourdieu, 1972). The existence of these dispositions is observable in the group-level regularities of individual behaviour (Bourdieu, 1987). In other words, habitus explains that external influences become internalised and manifest as durable, observable behaviours, be they health behaviours, purchasing behaviours or any other.

An individual's attitude toward the practice of smoking is a disposition determined by habitus. Like other such dispositions – to opera, cooking, fashion and so on – attitudes to smoking are affected by group context on a relatively small scale (Bourdieu, 1972). Research on school-age smoking has demonstrated how the same 'fundamental causes' can be associated with very different attitudes to tobacco. A UK study, for example, found that smoking was expected of 'popular' girls and was associated with high self-esteem, being fashionable and spending time after school with boys (Michell and Amos, 1997). In contrast the girls who were less popular were under no social pressure to smoke. Also different were the boys for whom the social benefits of smoking were tempered by what the researchers described as an 'obsessive interest' in football and fitness (Michell and Amos, 1997, p. 1868). These results are specific to their context and are not generalisable. A similar study in the United States found that sport was not protective against smoking for boys and that for both genders smoking was associated with popularity (Schaefer *et al*, 2012). Even at the most local level, the relationships between social class position, habitus and smoking will vary, yet they point to the ways in which immediate cultural influences shape smoking habits.

A fundamental characteristic of habitus-based smoking decisions is that they are durable in the face of changing economic or social conditions. Bourdieu recorded this durability among the Kabyle people of Algeria as they struggled with their new exposure to capitalism (Bourdieu, 1962). He argues that habitus is highly stable and resistant to change because it functions 'below the level of consciousness and language, beyond the reach of introspective scrutiny or control by the will' (Bourdieu, 1984, p. 466). The maintenance of health behaviours in changed economic circumstances is apparent among Australia's so-called 'cashed-up bogans' (Pini *et al*, 2012; Pini and Previte, 2013). 'Cashed-up bogans' is a pejorative term for working-class families who have become newly wealthy following a protracted mining boom and shortage of skilled manual labour. These working-class families have vastly changed their financial social position whilst retaining their previous attitudes and behaviours, particularly in relation to health behaviours such as alcohol consumption and smoking (Pini *et al*, 2012).

The durability of habitus, and smoking behaviours by extension, is bolstered by the sense in which all of a person's attitudes and behaviours make up a cohesive whole (Bourdieu, 1972). Smokers tend not to construct their smoking as an independent behaviour easily separated from the rest of their lives, but rather as one equally important aspect of themselves among many others (Dennis, 2007; Gilbert, 2005). Smokers have reported feeling 'not themselves' when they quit smoking, having strongly embodied the practice and made it part of their sense of self (Dennis, 2011). Others place the risk of

smoking alongside other health risks such as diet and activity in order to 'trade off' exactly how serious the ultimate risks to their health might be (Gilbert, 2005; Katainen, 2006). Perhaps most interesting is the finding that people in different social positions construct their smoking differently with working-class smokers more likely to describe themselves as being addicted and middle-class smokers citing the aesthetic pleasures of smoking (Katainen, 2010).

Across these diverse results the consistent theme is smoking as one constituent part of a person's set of habitus-linked dispositions. These dispositions may be associated with social position, as they are in the Australian data on smoking prevalence and disadvantage. However, the structural influence of disadvantage is refracted through more immediate, proximal structures like peer group. When these proximal structures remain consistent, habitus-incorporated behaviours like smoking are resistant to changes in distal structures like income level.

Public Health Interventions as Discursive Structures

Bourdieu's conception of habitus is illuminating in shifting the influence of structure down towards the individual and the immediate circumstances of their lives. Given the marked shift in smoking behaviour across the industrialised world, however, the durability of habitus is clearly overstated. The reduction in smoking prevalence is not the result of changes to the 'fundamental causes': relative social position has not improved in the last half century (Piketty and Saez, 2003). Rather income inequality has grown (Piketty, 2003; Cingano, 2014), including in countries with the greatest reductions in smoking (Atkinson and Leigh, 2007).

The suite of anti-tobacco public health interventions – advertising prohibitions, bans on smoking in enclosed public spaces, increases in tobacco taxes and social marketing campaigns – are credited with producing much of the observed reduction in smoking levels (Wakefield *et al*, 2008). Overall in industrialised countries (even among those in the most disadvantaged groups) public health interventions have successfully shifted population habitus to being non-smoking.

Bourdieu's description of habitus does not give due credit to the power of public health interventions to shift habitus and behaviour. Developing a more accurate account of structure therefore requires revisions to Bourdieu's account. According to Bourdieu, habitus is generated solely by the interaction of economic, social and cultural capital and almost exclusively in terms oppositional to alternative class positions (Bourdieu, 1984). Existing

applications of Bourdieu to public health place the preference for smoking/non-smoking within the sphere of cultural capital (Abel and Frohlich, 2012; Poland *et al*, 2006; Frohlich *et al*, 2001). Cultural capital is a composite measure of affinity with 'high' culture in the form of art, music and literature and a person's education level (Bourdieu, 1986). Non-smoking is considered to be part of the habitus of those with high cultural capital in distinction to the preference for smoking among those with low cultural capital (Pampel, 2006). There are three reasons not to accept this subsumption of smoking preference into cultural capital. First, and most importantly, it is hardly less reductive of the relationship between class and behaviour than simply stratifying people according to education level. Second, it is blind to ongoing reduction in smoking prevalence. For each person who has quit smoking in adulthood there has been a change in their habitus which is not reducible to the influence of their formal education and preference of art. Finally it is unable to explain the development of a non-smoking cultural capital, which is itself a recent product and one influenced heavily by anti-smoking interventions.

It is inaccurate, therefore, to conceptualise the habitus-modifying effect of public health as a form of capital capable of producing class positions. Doing so mischaracterises what is, in fact, a technical move to encourage behaviour change in the entire population (Rose, 1985). Public health interventions – be they social marketing campaigns or the imposition of taxes – do not emanate from any particular class position and, likewise, are not directed at any particular class position.

Nonetheless, given their importance and effectiveness, public health interventions exhibit all the traits of being structural factors which influence population and individual health. Incorporating them into an account of structure requires a broader range of influences on the creation, maintenance and revision of the habitus. In short we must liberate habitus from its reliance on a theory of capital in favour of a wider appreciation of the many types of power at play in society.

Public health interventions are examples of what Foucault terms 'governmentality' – a liberal version of governance in which the freedom of individuals is incontrovertible and attempts to regulate conduct take the form of encouraging people to make one free choice rather than another (Foucault, 2000). By highlighting individual freedom this form of regulation is often – and deliberately – inconspicuous. As Foucault explains, modern 'power is tolerable only on condition that it mask a substantial part of itself. Its success is proportional to its ability to hide its own mechanisms' (Foucault, 1979, p. 86) The key to governmentality is, then, that regulation is offered as being in the population's best interests: in this way the true purpose of regulation is obscured (Burchell, 1993; Dean, 2010). Appealing to a decision's healthiness

has developed into one of the strongest ways of encouraging the members of a population to behave in a certain way (Lupton, 1995). Anti-smoking interventions, in which all members of the population are encouraged to quit so that their health will improve, their lungs will not fill with tar, and they will not miss family barbecues (as done in tobacco campaigns in Australia) are examples both of governmentality and its effectiveness in practice. Interventions need not so explicitly lecture on the correct course of conduct to exhibit governmentality. Taxation on tobacco products is equally designed to encourage people to exercise their freedom in a certain way (by raising prices, making smoking more expensive and discouraging the purchase of tobacco).

Two characteristics of public health interventions recommend an integration of habitus and governmentality in order to provide the most accurate description of the operation of structure in generating health inequalities. The first is that dominant public health messages have been internalised by many, subconsciously structuring their behaviour in precisely the ways that Bourdieu describes the internal dispositions of habitus doing. The second is that these messages have not been taken up equally or consistently in the totalising fashion averred by Foucault's theory of governmentality. Rather, as discussed, there are group-based differences in response which point to the existence and importance of additional and differing influences upon habitus.

The internalisation of public health messages is well-documented. The central message of public health is that we must act today in order to reduce risk tomorrow (Beck, 1992; Lupton, 2013). Specific messages regarding quitting smoking, eating healthily or reducing alcohol consumption all have the same underlying form: that action today is necessary in order to reduce future risk. Even in the strongest cases this risk is uncertain: though smokers are 14 times more likely to develop lung cancer than non-smokers, only 15 per cent of smokers develop lung cancer (Brennan *et al*, 2006; Peto *et al*, 2000).

That smoking might be thought of in terms other than of risk/health is today almost unthinkable. Even among smokers seeking to justify their habit, the language of risk is invoked. Gilbert (2005) reports interviews with Australian women regarding their smoking and reproduces the following excerpt in which the role of risk is most clear:

> Well, all the health risks, … I'm aware of all of it, but I think with my lifestyle I shouldn't really worry. I mean, I should worry about it, but I work out everyday, I eat healthy, apart from smoking, that's probably the unhealthiest thing. (p. 236)

This construction of behaviours in terms of risk is near universal, whether a person accepts that a risk is significant enough to warrant behaviour change,

or simply one other in a risky world, the discourse of risk itself is inescapable (Beck, 1992). To the extent that governments attempt to directly intervene in risk reduction by, for example, making cigarettes more expensive, they claim an authority to act on present freedoms in favour of future ones: we make it harder for you to smoke so you will have a healthier (and therefore freer) future.

A new account of structure in public health

Any account of structure in public health which claims to accurately represent the realities of individual lives must be consistent with three facts:

1. Stark differences of attitude and behaviour exist *within* class positions.
2. The power to influence these attitudes and behaviours does not lie solely with social class (however defined).
3. There are certain discourses which are structurally pervasive (e.g. risk) but not determinative of behaviour.

Below, we explore each of these in more detail.

The fundamental causes account of structure recognises none of these. The operation of structure is inferred from differences between large and wrongly presumed homogenous class groupings. Marxian analyses provide a clearer understanding of the causes of structural inequity but are still unhelpful in explaining how they influence different groups of individuals differently. Bourdieu's account on its own, though increasingly popular in public health, has limited scope for the sort of dynamic change witnessed in smoking cessation. Accounts of governmentality, on their own, lean towards the totalising power of discourses and ignore the ways these discourses are refracted through individual and group dispositions.

A combination is, therefore, necessary – one which captures both the durability of habitus and the diverse range of factors which go into its creation. We represent such a conception of structure in Figure 2.

Figure 2 depicts an array of influences which combine to create a 'shell' of habitus around each individual. Together these influences form to make up the individual, her beliefs and her behaviours. They are the lens through which she views, understands and interacts with the world. The shell metaphor is designed to convey the sense that habitus is constructed from within and without and that it is carried around in the form of dispositions which govern the way the individual interacts with the world. Though Bourdieu speaks of dispositions being internal, the shell aptly represents the way habitus operates at the boundary of individual agency and external structure.

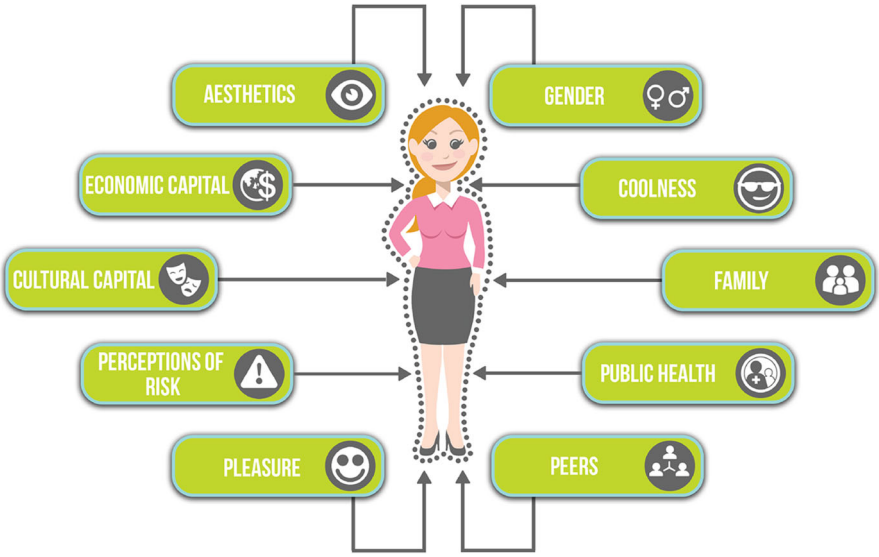

Figure 2: Structural factors making up a habitus of smoking.

As we have seen, this shell is resistant, though not impervious, to change. As the individual acts she may reinforce the shell by acting consistently, or resist it by acting inconsistently. Resistance is always possible but may be limited in its potential scope. Resistance to public health anti-smoking messages is common and can take the form of opposing risk discourse (my uncle smoked for 60 years and was fine) or of appropriating risk discourse (I smoke but I also eat healthily) but it does not and cannot avoid or circumvent concerns of risk.

The many influences appearing in Figure 2 encompass only a portion of the demonstrated influences upon a person's decision to smoke. Income and education are among these influences (in the form of economic and cultural capital) but they are not dominant or preeminent in any way. Their equal standing with the other influences is designed to convey the stark differences in smoking behaviour within income and education groups: for these differences the influence of income or education *cannot* be determinative.

There are, on this account, no *fundamental* causes of health inequalities, rather there is a complex layer of interrelated and interacting causes, the exact makeup of which is only revealed by detailed empirical analysis. Structure is embodied *by* the individual, making it futile to construct a hierarchy of influences operating at different distances *from* the individual. A person's income level is a part of her daily reality and is navigated as such, along with

all of her other quotidian concerns. It may be that her income level is set by some opaque combination of government and corporate practice, but this does not make it a more fundamental cause of her health behaviours.

Consequences and Conclusion

The account of structure provided in this paper in public health necessitates three changes to current practice.

The first is to jettison the idea that changing distal influences like income level will directly and effectively make individuals behave more healthily. The work by Pini and colleagues (Pini *et al*, 2012; Pini and Previte, 2013) does, in fact, offer empirical evidence that rapid increases in income do not necessarily translate into healthier behaviour.

The second is to more explicitly acknowledge the limitations of our efforts to document influences on health. For example, a compilation of individual survey responses is unable to completely, or even adequately, describe the complexity of factors which combine to make up habitus. In his ground-breaking work in sociology, C Wright Mills (1959) argued that survey responses are unable to elucidate the nature of structural influences because structure necessarily affects different groups differently but the composition of data requires that structure be treated as affecting everyone equally. Hence, the compilation of epidemiological data alone is incapable of identifying the effect of differing forms of capital or the operation of governmentalizing discourses.

Finally epidemiological analysis should focus on differences within social groups, and similarities across social groups – in contrast to the present approaches that privilege homogeneity within groups and that important differences exist between groups. It is considerably more enlightening to understand the difference between poor smokers and non-smokers, or the similarities between poor and rich smokers. In doing so, we can unpack the aspects of habitus that drive particular behaviours within different contexts.

There are, clearly enough, average differences in health between groups stratified according to social status. This likely reflects an underlying inequity in the distribution of resources around the globe, as currently argued by many prominent scholars working on the social determinants of health. It is certainly the case that global inequity is lamentable and that reducing inequity deserves its place among the newly agreed-upon Global Goals (UN, 2015). However, the co-existence of inequity and health inequity cannot be the end point of an account of how structural factors come to influence population and individual health. In this paper we have presented an account of structure that is better able to explain what structure is in public health, how it

influences individual behavioural decisions and the extent of change required to shift population health behaviour.

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