

Placing Health Inequalities: where you live can kill you

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Today, Americans live three years less than their counterparts in France or Sweden. Scottish men live more than two years less than English men and there is a 25-year gap in life expectancy across the suburbs of New Orleans (Bambra, 2016). Why are there such inequalities in health across all geographical scales - between neighbourhoods, cities, regions, or countries? Health geographers have traditionally explained these health divides in terms of the effects of compositional (*who lives here*) and contextual (*what is this place like*) factors. The compositional explanation asserts that the health of a given area, such as a town, region or country, is a result of the characteristics of the people who live there (individual-level demographic, behavioural and socio-economic factors). Whereas, the contextual explanation argues that area-level health is also in part determined by the nature of the place itself in terms of its economic, social, and physical environment. More recently, it has been acknowledged that these two approaches are not mutually exclusive and that the health of places results from the interaction of people with the wider environment (Cummins et al, 2007). This chapter will therefore also examine the *relational* approach (which tries to accommodate this *interaction*) as well as the *political economy* approach (which reconceptualises *context*, looking beyond the local instead at the influence of national and international political and economic factors) (Bambra, 2016).

Who lives here: The compositional approach

The compositional view argues that *who lives here* – primarily the health behaviours (smoking, alcohol, physical activity, diet, drugs) and socio-economic (income, education, occupation) characteristics of the people living within a particular area (neighbourhood, city,

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region, country) determines its health outcomes: that *poor people* result in *poor places*.

Smoking, alcohol, physical activity, diet, and drugs – the five so-called **lifestyle factors** or

risky health behaviours, all influence health significantly. Smoking remains the most

important preventable cause of mortality in the wealthy world and is causally linked to most major diseases such as cancer and cardiovascular disease (Jarvis and Wardle, 2006).

Likewise, excessive alcohol consumption is related to some cancers as well as other key risks such as high blood pressure. Alcohol-related deaths and diseases are on the increase. Poor diet and low exercise rates can lead to obesity which, as discussed in the previous chapter, is a major risk factor for poorer health and longevity. Drug abuse is an increasingly important determinant of death amongst the young (Bambra et al, 2010). People who do not smoke, have only moderate alcohol intake, consume a high amount of fruit and vegetable and engage regularly in physical activity will on average have a 14 year higher life expectancy than individuals achieving no healthy behaviours (Khaw et al, 2008). So, on average, areas (countries, regions, cities, neighbourhoods) with higher rates of these unhealthy behaviours amongst their populations would have worse health than others, all things being equal.

The socio-economic status of people living in an area is also of huge health significance.

Socio-economic status is a term that refers to occupational class, income or educational level (Bambra, 2011). People with higher occupational status (e.g., professionals such as teachers or lawyers) have better health outcomes than non-professional workers (e.g., manual workers). By way of example, data shows that infant mortality rates were 16% higher in children of routine and manual workers as compared to professional and managerial workers (Marmot, 2010). Having a higher income or being educated to degree level can also have a protective health effect, where as having a lower income or no educational qualifications can have a negative health impact. The poorer someone is, the less likely they are to live in good

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quality housing, have time and money for leisure activities, feel secure at home or work, have good quality work or a job at all, or afford to eat healthy food - the social determinants of health (Marmot, 2010).

What is this place like: The contextual approach

So whilst the compositional view argues that it is *who lives here* that matters for area health – and that essentially *poor people make poor health*, the contextual approach instead highlights the fact that *what is this place like* also matters for health. Health differs by place because it is also determined by the economic, social, and physical environment of a *place*: that *poor places lead to poor health*. Place mediates the way in which individuals experience social, economic and physical processes on their health: places can be salutogenic (health promoting) or pathogenic (health damaging) environments - place acts as a health ecosystem. These place-based effects can also be seen as the *collective* effects of the social determinants of health. There are three contextual aspects to place that have traditionally been considered as important to health: economic, social and physical.

The compositional view takes into account the effects of individual socio-economic position on health status. Area-level economics instead looks at the health effects of the local economic environment, independent of individual socio-economic position. Area-economic factors that influence health are often summarised as *economic deprivation*. They include area poverty rates, unemployment rates, wages, and types of work and employment in the area. The mechanisms whereby the economic profile of a local area impacts on health are multiple. For example, it affects the nature of work that an individual can access in that place (regardless of their own socio-economic position). It also impacts on the services available in a local area, as more affluent areas will attract different services (such as food available

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locally or physical activity opportunities) than more deprived areas as businesses adapt to the different consumer demands in each area (see access to services in the opportunity structures section below). Area-level economic factors such as poverty are a key predictor of health including cardiovascular disease, all-cause mortality, limiting long-term illness, and health-related behaviours (Macintyre, 2007).

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Places also have social aspects which impact on health. Opportunity structures are the socially constructed and patterned features of the area which may promote health through the possibilities they provide (Macintyre, Ellaway, and Cummins, 2002). These include the services provided, publicly or privately, to support people in their daily lives such as child care, transport, food availability or access to a family physician or hospital, as well as the availability of health promoting environments at home (e.g. good housing quality, access and affordability), work (good quality work) and education (such as high quality schools). For example, local environments can shape our access to healthy – and unhealthy – goods and services thus enhancing or reducing our opportunities to engage in healthy or unhealthy behaviours such as smoking, alcohol consumption, fruit and vegetable consumption, or physical activity. One example is the **obesogenic environment**. The local food environment – such as the availability of healthy and unhealthy foods in the neighbourhood - as well as opportunities for physical activity – are there parks or gyms, is the outside space safe and walk able - are both central components of the obesogenic environment. Research has shown that in some low income areas **food deserts** exist where there is a paucity of supermarkets and shops selling affordable fresh food on the one hand, alongside an abundance of convenience stores and fast food outlets selling energy dense junk food and ready meals (Pearce et al, 2007). Low income neighbourhoods – particularly urban ones - may also inhibit opportunities for physical activity. Associations have been found between neighbourhood availability of

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fast food and obesity rates in a number of wealthy countries including the United Kingdom, United States and New Zealand (Pearce et al. 2007; Burgoine, Alvanides, and Lake 2011).

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A second social aspect of place is collective social functioning. Collective social functioning and practices that are beneficial to health include high levels of social cohesion and social capital within the community. Social capital - "*the features of social organisation such as trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions*" (Putnam, 1993, p. 167) - has been put forward as a social mechanism through which place mediates the relationship between individual socio-economic status and health outcomes (Hawe and Shiell, 2000) (. Some studies have found that areas with higher levels of social capital have better health such as lower mortality rates, self-rated health, mental health, and health behaviours. More negative collective effects can also come from the reputation of an area (e.g., stigmatised places can result in feelings of alienation and worthlessness) or the history of an area (e.g., if there has been a history of racial oppression). Place attachment (an emotional bond that individuals or groups have with specific places) in contrast can have a protective health effect (Gatrell and Elliot, 2009) . Certain places become marginalised by obtaining a spoiled identity and subsequently become stigmatised and discredited. This can be as a result of environment factors such as air pollution or dirt as well as from social stigma – such as being labelled the obesity capital of Britain as happened with Copeland in West Cumbria (North West England), or economic stigma such as low property prices (Bush, Moffatt, and Dunn, 2001). Residents of stigmatised places can also be discredited by association with these place characteristics. A notable case of such placed-based stigma is Love Canal, New York – the location of a toxic waste dump. Research has shown that such place-based stigma can result in psychosocial stress and associated ill health alongside feelings of shame, on top of the physical health effects of air pollution such as

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respiratory disease(Airey, 2003). Local attitudes, say around smoking, can also influence health and health behaviours either negatively or positively (Thompson, Pearce, and Barnett, 2007).

The physical environment is widely recognised as an important determinant of health and health inequalities (WHO - World Health Organisation, 2008). There is a sizeable literature on the positive health effects of access to green space, as well as the negative health effects of waste facilities, brownfield or contaminated land as well as air pollution (Bambra, 2016). A (in)famous example of the latter is the so-called *Cancer Alley* – the 87 mile stretch in the American state of Mississippi between Baton Rouge and New Orleans, the home of the largest petrochemicals site in the country (Markowitz and Rosner, 2003). In 2016 it was estimated that air pollution levels in London accounted for up to 10,000 unnecessary deaths per year (Walton et al, 2015) . Another example of how the physical environment of areas varies is in respect to land pollution. A study found that in the American city of Baltimore, mortality rates from cancer, lung cancer, and respiratory diseases were significantly higher in neighbourhoods with larger amounts of brownfield land (Litt, Tran, and Burke, 2002). Similarly, an English study of differences in exposure to brownfield land found that neighbourhoods with larger amounts of brownfield land have higher rates of poor health and limiting long term illness (Bambra et al, 2014).

The health geography literature has also established the role of natural or green spaces as *therapeutic* or health-promoting landscapes. So for example, studies have found that walking in natural, rather than urban, settings reduce stress levels and people residing in *green areas* report less poor health than those with *less green* surroundings (Maas et al, 2005). Research also indicates that green space can impact on health by attention restoration, stress reduction

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and/or the evocation of positive emotions (Abraham, Sommerhalder, and Abel, 2010).

Awareness of how such factors differ by place has led to the development of the concept of 'environmental deprivation' - the extent of exposure to key characteristics of the physical environment that are either health promoting or health damaging (Pearce et al, 2010).

Environmental deprivation is associated with all-cause mortality: mortality was lowest in areas with the least environmental deprivation and highest in the most environmentally deprived. The unequal socio-spatial distribution of the environmental deprivation has also led to commentators developing the concept of environmental justice (Pearce et al, 2010). The fact that more deprived neighbourhoods are more likely to have air and land pollution and less likely to have green space can be seen as an aspect of social injustice (Pearce et al, 2010).

Poor people *and* poor places: The relational approach

The contextual and compositional explanations for how place relates to health are not mutually exclusive and to separate them is an over simplification and ignores the interactions between these two levels (Macintyre, Ellaway, and Cummins, 2002). The characteristics of individuals are influenced by the characteristics of the area. For example, occupational class can be determined by local school quality and the availability of jobs in the local labour market or, children might not play outside due to not having a private garden (a *compositional* resource), because there are no public parks or transport to get to them (a *contextual* resource) or because it might not be seen as appropriate for them to do so (*contextual* social functioning) (Macintyre, Ellaway, and Cummins, 2002). Similarly, areas with more successful economies (e.g. more high-paid jobs) will have lower proportions of lower socio-economic status residents.

Further, the collective resources model suggests that all residents, and particularly those on a low income, enjoy better health when they live in areas characterised by more/better social and economic collective resources. This may be especially important for those on a low incomes as they are usually more reliant on local services. Conversely, the health of poorer people may suffer more in deprived areas where collective resources and social structures are limited, a concept known as deprivation amplification: that the health effects of individual deprivation, such as lower socio-economic status, can therefore be amplified by area deprivation (Macintyre 2007). Figure 1 shows an example of these interaction effects. This figure shows how a healthy lifestyle score in the study in the East of England is affected by both individual occupation (compositional) and also by area level deprivation (contextual): people from all occupational backgrounds fare worse in areas of higher deprivation than when living in more affluent areas (Lakshman et al, 2011).

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Figure 1: Mean healthy lifestyle score across quintiles of neighbourhood deprivation and six categories of occupational social class in the East of England

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Composition and context should not therefore be seen as separate or competing explanations – but entwined. Both contribute to the complex relationship between health and place – an ecosystem made up of people, systems and structures. As Cummins and colleagues argue, “there is a mutually reinforcing and reciprocal relationship between people and place” - a relational approach should therefore be taken to understanding how compositional and contextual factors interact to produce geographical inequalities in health (Cummins et al, 2007, p.1826). Table 1 provides an example of the relative role of compositional and

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contextual factors individually and collectively in explaining health inequalities between the most and least deprived neighbourhoods of a case study town - Stockton on Tees in the North-East of England. Stockton on Tees has a 17 year gap in life expectancy for men and 11 years for women between its most and least deprived neighbourhoods. This is the largest gap in life expectancy within a single local authority in England. Table 1 shows the results of statistical modelling of household survey data that examines how much of the health gap in Stockton is explained by compositional and contextual factors - and their interaction. The compositional factors used relate to individual level socio-economic factors (income, unemployment etc.), psychosocial factors (loneliness, isolation etc.), and behavioural factors (smoking, drinking, diet, exercise). The contextual data relates largely to the physical environment (noise, pollution, dirt, crime, safety, housing quality). Three different measures of health are used: general wellbeing (EQ5D and EQ-VAS scales) and physical health (SF8-PCS). Compositional factors account for by far the majority of the gap 47% across all three of the health outcomes. Contextual factors account for between 3% and 11%. Of course, the different causes of health gaps often cluster together – people who experience poor material factors often also experience poor psychosocial factors and poorer environments, and are more likely to engage in less healthy behaviours. This interaction of compositional and contextual factors is also shown in Table 1 and it accounts for between 18% and 30% of the gap. As often with statistical models there is a certain proportion of the gap that remains unexplained. However, this analysis shows that both contextual and compositional factors matter and that their interaction is an important cause of geographical inequalities in health - supporting a *relational* approach to health and place (Bhandari et al, 2017).

Table 1: The relative role of compositional and contextual factors individually and collectively in explaining the health gap in Stockton on Tees, England

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Beyond the individual and the local: The political economy approach

The **political economy** approach to explaining health divides focuses on the **social, political and economic structures and relations** that may be, and often are, outside the control of the individuals or the local areas they affect (Krieger, 2003). Individual and collective social and economic factors such as housing, income, and employment – indeed many of the issues that dominate political life – are key determinants of health and wellbeing (Bambra, Fox, and Scott-Samuel, 2005). Why some places and people are consistently privileged whilst others are consistently marginalised is a political choice – it is about where the power lies and in whose interests that power is exercised. Political choices can thereby be seen as the **causes of the causes of the causes** of geographical inequalities in health (Bambra, 2016).

By way of example, we can examine the causes of stroke or heart disease (Bambra, 2016). The immediate clinical **cause** could be hypertension (high blood pressure). The *proximal cause* of the hypertension itself could be compositional lifestyle factors such as poor diet, of which the contextual cause might be living in a low income neighbourhood. The causes of the latter are political – low income neighbourhoods exist because the political and economic system allows them to exist. Wages could be regulated so that they are higher (an example being the living wage), or food prices could be controlled/subsidised (e.g., in the United States it is meat and corn oil that receive government subsidies not fruit and vegetables, likewise in the European Union, farmers are encouraged to produce dairy) and neighbourhood food provision does not have to be left to the vagaries of the market (which leads to clustering of poor food availability in poor neighbourhoods).

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In this sense, geographical patterns of health and disease are produced by the structures, values and priorities of political and economic systems (Krieger, 2003). Area-level health – be it local, regional or national – is determined, at least in part, by the wider political, social and economic system and the actions of the state (government) and international level actors (supra-national government bodies such as the European Union, inter-state trade agreements such as the Transatlantic Trade and investment partnership [TTIP], as well as the actions of large corporations): politics can make us sick – or healthy (Schrecker and Bambra, 2015). Politics and the balance of power between key political groups – notably labour and capital – determine the role of the state and other agencies in relation to health and whether there are collective interventions to improve health and reduce health inequalities, and also whether these interventions are individually, environmentally or structurally focused. In this way, politics (broadly understood) is the fundamental determinant of our health divides because it shapes the wider social, economic and physical environment and the social and spatial distribution of salutogenic and pathogenic factors both collectively and individually (Bambra, 2016).

An example of the influence of politics on health is demonstrated in Figure 2. This shows the gap between the most and least deprived neighbourhoods and how this increases through the 1980s and 1990s. Collins and McCartney (2011) argue that this is a result of the Thatcher government's (1979-1990) neoliberal approach to the economy and society and constituted a political attack against the working class, and that Scotland (particularly Glasgow and the West of Scotland) became a particular target (Collins and McCartney, 2011).. The Thatcher government radically altered the social settlement: mass unemployment became normalised via deindustrialisation at the same time as trade union and workers' rights were curtailed, there were significant reductions in welfare benefits leading to the intensification of poverty

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and wage compression, as well as vast reductions in the availability of social housing (Scott-Samuel et al, 2014). Whilst neoliberalism spread across wealthy countries in the 1980s, the United Kingdom was exposed in a way that other European nations were not – in a very rapid and intense manner which adversely affected health through unemployment, poverty, alienation and associated increases in risky health behaviours. For example, deindustrialisation was implemented as a shock doctrine with very rapid loss of employment within a few years in the UK, whilst in other Western European countries it was phased in more gradually and often with more safety nets (such as employment services or inducements for new industry to come to the affected areas). A more recent example is the effects of austerity and the resulting reductions in welfare benefits and public services on social geographies and health inequalities (Pearce, 2013).

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Figure 2: Geographical trends in health inequalities in Scotland 1981 to 2001 (by Carstairs area deprivation)*

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* RII - relative index of inequality – for further information see Regidor (2004)

Future directions

To date, health geography has conventionally presented two main explanations as to why there are such stark inequalities in health: *compositional* and *contextual*. More recently though, these approaches have been reconciled via the *relational* understanding of place and health. Further, a *political economy* approach has also started to be taken up within the discipline so that the role of the wider macro political, economic and societal context is beginning to be examined. The future directions and frontiers for research into geographical inequalities in health lie in taking this political economy approach forward by examining

such things as the effects of continuing austerity in southern Europe on geographical inequalities in health; the effects of major global changes such as the migration crisis and the emergence of right-wing populist governments on the social inequalities underpinning health inequalities; and the global economy which is facing sudden shocks such as Brexit.

Acknowledgements

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