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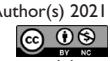
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Place, health and dis/advantage: A sociomaterial analysis

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Abstract

The substantial literature on interactions between places/spaces and well-being/health often differentiate between physical and social aspects of geographical location. This paper sidesteps this dualism, instead considering places as sociomaterial assemblages of human and non-human materialities. It uses this posthuman and 'new materialist' perspective to explore how place-assemblages affect human capacities, in terms of both health and social dis/advantage. Based on secondary analysis of interview data on human/place interactions, it analyses the physical, sociocultural, psychological and emotional effects of place-assemblages, assessing how these produce opportunities for, and constraints upon human bodies. It than assesses how these emergent capacities affect both social dis/advantage and well-being. This analysis of how place-assemblages contribute positively or negatively to health and dis/advantage offers possibilities for further research and for social and public health policy.

Keywords

affect, assemblage, dis/advantage, new materialism, place

Introduction

The potential impact of spaces and places on human health and well-being has been widely studied, with many hundreds of academic papers in the health and social sciences exploring these interactions between location and health. Generally speaking, findings

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have differentiated between the effects of the inherent physical attributes of spatial environments upon bodies and sociocultural effects deriving from the human inhabitants of those spaces and places. This duality, we would suggest, artificially separates 'natural' and 'cultural' worlds, with the consequence that one or other maybe intentionally or unintentionally privileged during explorations of these interactions.[1]

In this paper we step beyond this 'material/social' divide in order to establish a perspective on how places and spaces (along with other non-human matter) produce sociomaterial advantage, disadvantage and inequalities (Fox and Powell, 2021; Bennett, 2005). To this end, we build upon a thread within social science scholarship that has explored the effects of place assemblages and 'affective atmospheres' associated with space and place (Anderson, 2009; Duff, 2011; Foley, 2011; Yuill et al., 2019). We establish a 'new materialist' perspective on place, health and sociomaterial dis/advantage that treats both physical and social aspects of places as materially affecting what those places and spaces can do. Places, in this ontology, are 'assemblages' of both non-human and human components, and the positive or negative capacities of places that affect human health and dis/advantage are emergent properties of these place-assemblages. This formulation thereby assures that the complex interactions between human and non-human matter are acknowledged in any analysis.

We begin by offering a typology of the literature on place and health in terms of a material/social dualism. We critique this dualism and develop a new materialist and more-than-human alternative, re-making understandings of 'place', 'health' and 'social position'. We use this framework to establish a methodological approach, and then apply this to a dataset of in-depth qualitative interviews, from which we draw out three illustrative place-assemblages, and explore the human capacities that place-assemblages produce. We conclude by discussing the implications of this approach for the study of place, health and dis/advantage.

Place and health: A typology

A substantial number of empirical studies have documented interactions between places, spaces and health (Lee and Maheswaran, 2011; Macintyre et al., 2002; Pickett and Pearl, 2001), often differentiating 'material' and 'social' explanations of a place/health effect (Curtis and Rees Jones, 1998), with 'social' explanations further sub-divided into effects on individuals and upon neighbourhoods or communities.

Place and space can have a range of negative material effects on health, including hazards associated with natural environments, such as floods, harmful animals and plants or occupational safety (Smith et al., 2008: 57), and with the built environment, including poor housing, pollution or traffic accidents (Gibson et al., 2011: 181–182; Hartig et al., 2014). Studies have indicated how green spaces in both city and countryside settings (Morris, 2003: 15) and the built environment (Renalds et al., 2010; Transportation Research Board, 2005) can encourage citizens to physically exercise. The natural environment has also been linked to enhanced psychological well-being (Curtis, 2010: 38–44), while also acting as a means to reduce 'stress' (van den Berg et al., 2010). Reviews of literature suggest that the built environment – from domestic spaces through to city architecture and planning – can have multiple positive

and negative consequences for health, via a wide range of affordances and constraints associated with physical infrastructure in locations, such as community facilities, transport and shops and health services (Evans, 2003; Macintyre et al., 2002).

The 'social' effects on individuals may be divided into direct social or economic effects of place; the impact of social norms and stigma on well-being; and intersectionality of geography with a range of social stratifications. While urban centres supply opportunities for employment, economic benefits may be more unequally spread in rural areas (Swanstrom et al., 2002) with differential effects on health (Schulz and Northridge, 2004). Green spaces within urban environments can provide opportunities for both economic growth (Tzoulas et al., 2007: 169) and social interaction and support, with positive effects on well-being (Maas et al., 2009).

Social norms and expectations deriving from human populations within localities may impact on health, for example to influence patterns of diet and physical activity (Powell et al., 2015). Meanwhile, living in rural areas may negatively impact health and wellbeing through individual experiences of stigma or social exclusion (Watkins and Jacoby, 2007).

Finally, place may intersect a range of social divisions associated with gender, age, ethnicity and disability, with consequences for how these stratifications affect individuals' health (Geronimus et al., 2006; Kapilashrami et al., 2015: 301; Kaplan, 1996; Keene and Padilla, 2010; Lee and Maheswaran, 2011: 218; Pulido, 2017: 529).

Various mechanisms have also been suggested for how places and spaces may impact on health by acting at the level of communities or neighbourhoods. Community cohesion is associated with lower mortality rates (Kawachi et al., 1997), while community resilience to health challenges was found by Mitchell et al. (2009) to be associated with four area characteristics: population composition, population retention/attraction, housing and social cohesion. Collective control over decision-making has also been suggested as a means whereby community members can influence processes that determine their health and wellbeing (Whitehead et al., 2016). Brownett and Evans (2020) have suggested that local events such as community festivals can instil a connection and sense of belonging to places, with positive effects on public health. Area reputation has been linked to health positively (McKenzie, 2012; Popay et al., 2003) and negatively (Thomas, 2016).

While this literature confirms the complex, multifactorial character of place/health interactions (Lee and Maheswaran, 2011: 217), a focus on horizontal or individual factors has been criticised for its failure to disclose the processes that produce health inequalities (Bambra et al., 2019: 40; Minh et al., 2017: 155). Furthermore, a distinction between social and material factors has offered limited opportunity to explain apparently contradictory findings across studies of place and health, failing to capture the interdependency of social and environmental processes.

To address these commentaries, in this paper we begin from the ontological premise that whether or not the agency of place/space is 'physical' or 'sociocultural', there is a *material* impact on human bodies. We apply an alternative, *sociomaterial* approach capable of exploring the wide range of impacts of places and spaces on human health. Foundational to this perspective is the acknowledgement that places must be understood as assemblages of multiple material and social elements. Places and spaces are neither a

mere 'backcloth' for human practices (Massey, 2005: 29; Thrift, 2008: 19) nor are they in some way prior and determining (Barad, 2007; 180), as asserted in many of the models of place and health reviewed in the previous review. Consequently, this understanding means that analysing the effects of spaces and places on humans and their health and social position is highly contingent: we have no idea what a space or place can do until we explore it as an affective assemblage (Yuill et al., 2019: 126).

Alongside our own previous work on health assemblages (Fox, 2011, 2012, 2017), we build on a primarily social geographic body of scholarship that has explored places/spaces as affective assemblages (Andrews et al., 2014: 212). Dovey (2012) has used the concept of assemblage to model complex, multiscalar phenomena such as cities that intermesh formal and informal processes, while Anderson (2009: 78) anchors a conception of 'affective atmospheres' as both material and discursive firmly to Spinozist and Deleuzian conceptions of affect (addressed in detail later in the present paper).

These concepts have been applied to health and space in Duff's (2011) notion of 'enabling places' that access social, affective and material resources, and Foley's (2011) notion of a 'therapeutic assemblage' comprising material, symbolic and performative elements. This latter framing was further developed in Foley and Kistemann's (2015) exploration of 'healthy blue spaces', while Bell et al. (2018) argue that the concept captures the relationality and situatedness of wellbeing, and the 'dynamic sociocultural-material-affective-sensuous configurations' entailed. A concern with affective atmospheres of places is linked with notions of the health assemblage in Duff's (2014) empirical work on street drug use, and in Yuill et al.'s (2019) exploration of the interaction between landscape and well-being.

A new materialist approach to place/space, health and dis/advantage

Though the new materialisms are plural and disparate, with nuanced or sometimes major divergences between their advocates, two features cut across this diversity: their relationality/post-essentialism and their post-anthropocentrism/posthumanism. On relationalty, new materialisms replace essentialist notions of entities such as bodies, animals and inanimate things possessing pre-existing and fixed attributes, with relational materialities whose dispositions emerge only when they assemble with other materialities (Bennett, 2005: 445; Delanda, 2016: 20; Deleuze, 1988: 125). On post-anthropocentrism, the new materialisms treat all the disparate material relations (human and non-human) in these *assemblages* as possessing capacities to *affect*, or to be affected by, other assembled relations (Deleuze, 1988: 101). In this post-anthropocentric and posthumanist ontology, human agency is no longer the prime mover, nor is it the principal concern.

These two features entail a new emphasis upon relationality and the context-specificity of capacities (Fox and Alldred, 2017: 32–33). We develop these features further via the 'ethological' ontology of affects and assemblages set out by Deleuze (1988: 125–128) and developed by authors we cite below. As DeLanda (2016: 21) succinctly suggests: 'assemblages emerge from the interactions between their parts, but once an assemblage is in place, it immediately starts acting as a source of limitations and opportunities for

its components'. Consequently, the breadth of any relation's capacities, be it human or non-human, biological or inorganic, will depend upon the richness of its affective interactions rather than any essential attributes. However, the sheer range of potential relations within assemblages – from human bodies and all their institutions, to the soil underfoot or the air that is breathed, and in the context of this paper: places and spaces – requires that we pay detailed attention during social research to the complex flux of affects between both humans and non-human matter within assemblages (Bennett, 2010; Thrift, 2008: 9). This focus means that 'events' – which we use here simply to designate the occasions (myriad and unendingly successive) in which relations assemble (Thrift, 2008: 171) – become the subject-matter for social inquiry. In ethological ontology, there is no 'other level' of structure or system driving everyday events (Fox and Alldred, 2018: 318; van der Tuin and Dolphijn, 2010: 155). Consequently, power and resistance manifest at the level of events, as affects in assemblages establish a 'micropolitics' (Deleuze and Guattari, 1988: 216) of opportunities and constraints upon bodies. This has profound implications for all three terms in the title of this paper: place, health and dis/advantage.

First, a new materialist ontology considers places and spaces (from a city or a tract of countryside to a house, street, room or under-stairs cupboard) as *assemblages*, in which locations interact with multiple other human and non-human materialities (Powell, 2020: 2; Fox and Alldred, 2021). As such, places and spaces possess capacities to affect or be affected (Duff, 2011: 152; Kraftl and Adey, 2008: 214; Wolfe, 2017: 66–67). However, these capacities are not stable or prior attributes, but are acquired when a place or a space assembles with other matter (DeLanda, 2016: 21). Within this ontology, the task becomes not to seek out the essential characteristics of a place or space (including its capacities to affect human well-being or health), but to explore assemblages in which spaces or places are a component, to learn how and in what contexts they acquire particular and specific capacities. So, for example, a 'classroom' assembles a physical or 'virtual' (computer-constituted) space along with a teacher, students, teaching materials, theories of education, educational infrastructure, and so forth. The affects within these *place-assemblages* establish not only physical but also psychological, sociocultural, economic and political capacities in the component relations that assemble with these places during events (Kraftl and Adey, 2008: 226; Massey, 2005: 32).

Second, 'health' needs to be re-thought, not as an attribute of a body possessed to greater or lesser extent, but relationally. New materialist scholars have suggested that the 'health' of a body should be understood *micropolitically*, in terms of the affective and relational engagements between bodies and the material world during events and encounters (Duff, 2014; 53; Fox, 2011: 366). Following Deleuze, 'health' is consequently the 'actual measurable capacity to form new relations (Buchanan, 1997: 82) and a 'quantum of a body's power of acting' (Duff, 2014: 75). Furthermore, it is not the body itself, but the assemblages within which a body participates, that is 'healthy' (Buchanan, 1997: 82). This perspective has been applied in a range of empirical studies to elucidate the affective production of health and well-being (Fox, 2005, Fox and Ward, 2008; Coffey, 2020, Duff, 2014).

Finally, this Deleuzian emphasis on relational capacities may be extended beyond the physical and mental capacities conventionally associated with 'health', to include the economic, social, cultural and intersectional aspects of a body's qualities that contribute

to relative sociomaterial dis/advantage. 'Social position' should be considered not as an attribute of an individual body, but as an emergent set of *capacities*, contingent upon the assemblages within which it participates. Micropolitically, capacities and incapacities produce opportunities and constraints on what a body can do. These contribute the 'thousand tiny advantages and disadvantages' (Fox and Powell, 2021) that derive from people's quotidian interactions with other humans, non-human matter and places.[2] Over time, such tiny dis/advantages may accrete to produce more enduring disparities. In this analysis, 'health' and 'sociomaterial dis/advantage' are inextricably linked, indeed parts of the same phenomenon: health or ill-health may enhance or diminish a body's capacities to engage with the social world, while advantage or disadvantage may respectively establish or constrain physical and mental well-being.

Methodology and methods

This ethological ontology of place, health and dis/advantage translates to the methodology used in the study. The aim of the study was to explore from a new materialist perspective how place-assemblages produced capacities in human bodies that contribute to positive or negative health, and to relative dis/advantage. Methodologically, empirical exploration of material interactions between places and bodies entails analysis of spaces and places as *relations* and *assemblages*, identifying the *affects* assembling these place-assemblages, and exploring the *capacities* and incapacities that these affects establish in human bodies. These objectives may be achieved using a range of research methods, including interviews, observation, walking tours with key informants and on occasions survey data (Author 1, 2018 mixed).

While some new materialist scholars have criticised interview data as irretrievably humanist (St Pierre, 2014) or representational (MacLure, 2013: 664), others have used them within ethologically-informed studies as gain insider insights into the material assemblages, affects and capacities surrounding bodies and non-human matter (Fox and Alldred, 2015; Ringrose and Coleman, 2013). Here we report secondary analysis of interview data gathered in a qualitative study (the 'Families Study'). Respondents for this study were a stratified sample of 45 adult men and women, drawn from a pool of participants in the Yorkshire Health Study: a postal survey of 27,802 patients accessed via GP surgeries from 2010 onwards. The subsequent qualitative study gathered data in face-to-face interviews using the 'free association narrative' approach of Hollway and Jefferson (2000: 53), which enabled broad-ranging discussion of respondents' daily lives and practices, including the impacts of non-human matter, places and spaces on health and dis/advantage. NHS ethics approval was granted for both the original cohort and qualitative studies, with subsequent ethics approval for the current secondary analysis granted by the University of Sheffield. Respondents were ascribed pseudonymous identifiers, and specific places have been anonymised where original names might conceivably enable disclosure of respondents' identities.

The methodology of analysis departed significantly from a conventional qualitative approach. Rather than attempting – as in anthropocentric studies – to tell individual respondents' stories, the analysis following an approach developed by the first author

(Fox and Alldred, 2013: 779–780) that focused upon documenting the more-than-human assemblages of work and their micropolitics. The tasks of analysis were consequently:

- to identify human and non-human *relations* that assemble around particular events;
- to disclose the physical, psychological, social and economic *affects* (capacities to affect or be affected) that draw these relations into assemblage;
- to identify the *capacities* produced in bodies by these affect-economies – what bodies can do;
- to assess how and in what ways these capacities constrained or enabled bodies, leading to *dis/advantage*.

NVivo was used to fully code the qualitative transcripts, using the new materialist concepts described earlier to identify: respondents' relations with other humans, with non-human matter, and with places/spaces; the ways that places affected respondents; and the positive and negative capacities that these interactions produced. This coding was used to report this analysis, via a series of brief case-studies of place-assemblages and the capacities they produced, with assembled relations, affects and capacities illustrated by extracts from the data.

Findings

In this section we present an ethological analysis of the interview data. First, we note the range of spaces and places in research participants' accounts. We then analyse the affects within three case studies of place-assemblages and the capacities these produce. Finally, we assess the micropolitics of opportunities and constraints, and the production of tiny dis/advantages.

Places and spaces

Respondents mentioned a large number of non-specific or 'generic' spaces which they encountered in their daily lives, such as 'shop', 'church', school' and 'doctors' (Laura); 'this area' and 'a house just further up the road' (Jennifer), the 'coast' (Lorna) and 'another room' where Steve reported that he ate his lunch. However, far more frequent were mentions of specific places, either named or defined by their functions. The former included geographic regions such as South Wales (Betty); Italy and Spain (Katherine); Nottinghamshire (Laura); towns and villages including Conisborough (Jane), Moorends (Rebecca); Normanton (Steve); and other geographic features such as the Trans-Pennine Trail (Andrea) and the River Dearne (Laura). Named institutions included Far Grange holiday park (Alex); Meadowhall [shopping mall] (Laura); Manchester Airport (Jennifer); EuroDisney (Kate); and named supermarkets such as Morrisons (Jane), Aldi (Billy) and Sainsbury's (Katherine). Places with specific functions included 'the butcher's' (Jennifer); stables (Rebecca); 'our house' (Laura); 'my allotment' (Billy); and 'the local high school' (Keith).

The affectivity of place-assemblages

In this sub-section we explore how physical places assemble with a range of other non-human and human matter, with the affects between these relations producing a range of in/capacities in the latter. The following three case studies use the interview data to populate place-assemblages and identify the affects that produce specific in/capacities.

Place-assemblage 1: A village home. The interviews with Andrea (respondent #13) revealed the affectivity of the physical location where she lived. As an adult, she had intentionally returned to a specific street in the former South Yorkshire mining village where she had grown up. Affects in this place-assemblage served to geographically segregate her family from others in the village.

> It's the area, because of all this at the back, because we've got all fields at back and everything. I always said when we had kids that I'd want to move back down here because it seems, even though we're in [village] it's a bit out of the way, you have to go over the bridge and we're a bit out of the way of everything. And I don't have any worries with kids playing on street or anything like that. And big gangs, you haven't got big gangs of teenagers like you have when you go over the bridge, so that's why we like it down here.

The past was also affective in this place-assemblage, connecting the physical spaces nearby to Andrea's own childhood. As a consequence, she had devoted considerable effort to find a house on the street where she had grown up.

> We wanted a house further down, but we lost out on that, so we kind of went for this one. When it come up I said I don't care if it's a shed, I want to live on this street. There's a gate at bottom, that's end of our street and then it goes on to lane which is Trans-Pennine Trail. People who are walking up and down yeah, but it's nice because when kids get fed up like in school holidays or anything and it's like come on let's go for a walk. . . . [When I was young] we spent a lot of time in fields and when it were harvest time we used to love harvest, because they used to put all hay bales in fields and things. So we were always out and about, it wasn't Trans-Pennine Trail then; it was just fields and a track. And we used to be always out on our bikes and up and down and in fields and having picnics and things like that.

This sociomaterial place-assemblage might consequently be represented in terms of its constituents as (in no particular order):

> house; village; fields; gate; Trans-Pennine Trail; Andrea and her family; neighbours; walkers; Andrea's childhood home; new housing development; utilities

The affective capacities of the physical locations in this place-assemblage supplied opportunities for Andrea and her family to access open country, offsetting the physical limitations of a small terraced house.

> It's nice because when kids get fed up like in school holidays or anything and it's like come on let's go for a walk. And Lucy likes it because they have all horses in fields and things, so she likes it because she's horse mad. . . . that's why we wanted to come back here because it was

> so nice having all the fields for kids to run round in and play and that, . . . because there's a pond, there's a fishing pond over there, over the fields, so kids love going over there with their fishing nets and see what they can catch.

However, physical changes to this location since her childhood had affected Andrea negatively. Nearby new housing developments were placing a strain on local infrastructure, with consequences for everyday life in the village.

> We have horrendous power cuts because we haven't got a big, apparently electric supply down there, and because they're building more houses it's getting worse. Kids think it's fantastic in winter, because we get all candles, we've got loads of candles, house is lit up with them, so kids love it. . . . We're not so bad down here but when you get to junctions just a bit up street [traffic] does get a bit, because you can't see anything. Because cars are having to park on street you can't see to come out.

Place-assemblage 2: A village in decline. The ex-mining village where she had lived all her life provided Rebecca (respondent #4) with both opportunities and constraints. The physical elements of the natural and built environment were integrated within a place-assemblage that included her extended family and also the animals she kept. Two contradictory flows of affect in the assemblage had left Rebecca torn between options. On one hand, living in that location was convenient.

> We were on about moving in a few years' time, sort this one out and then move, maybe to [nearby village] or top end of village, but I wouldn't move far away. [Husband] would move, he'd move abroad but I wouldn't. I'm close to my family, I like going when my mum's got a day off. I go round to my mum's with kids and stuff like that, and horses and. My family, sometimes they do my head in but. No matter what you can ring any time day or night and they'll just come round if you, if you need something they'll always help you, so.

On the other hand, Rebecca was powerfully affected negatively by other elements in this place-assemblage. Social changes to the village's residential mix since the coal pits closed in the 1990s had made the village an unpleasant place in which to live, she said.

> I don't know, this sounds horrible but because, it's like young ones, they're having kids right young, then they think they're getting this house given to them. And majority of people round here they don't work. I know it sounds awful and I'm not a snob, but they don't work. But they're getting these houses given to them, and then you see the state of the houses. Yeah, there's loads of them around village because they're all rented out as like private rented, and then obviously they're not paying the rent, if they don't work they get their rent paid for them because they've got about 16 kids. To me it's ruining village because it just looks a mess. . . . Because I've grown up here you just notice it more. Houses were tidy, there was none of this renting houses and feral kids roaming round the streets and, you just wouldn't get, you know, you'd leave your back door unlocked.

This place-assemblage may be summarised as (in no particular order):

> houses; occupants; private landlords; shop; Rebecca and her family; pets; horses; allotments; family members; childhood home; memories; time

The passage of time and Rebecca's memories from her childhood were themselves affective, enabling her to compare and contrast past and present, further colouring her capacities to enjoy her home environment.

> It's horrible around here now. I don't know, when you were little we always used to, all the kids would be out playing on field and my mum used to leave us a note if she went out like to the shops. Because she'd leave key under the mat at the door, and like now you wouldn't dare, you'd have nothing left in your house when you came home.

Despite this, the place-assemblage still supplied some opportunities to enjoy life, principally associated with the animals she possessed.

> I've got a lot of animals as you can see, got two dogs, a cat, that's upstairs somewhere . . . rabbit and a guinea pig outside. . . . I've got two horses. They're just on [road], there's like a few allotments at back of there, and they're just on there. I've got a Shetland and a cob. . . . I've been down this morning, and on my day off I go down and clean them all out and just leave kids with [husband] and go down and escape.

Place-assemblage 3. The allotment. Billy's (respondent #23) home life in a South Yorkshire former mining village was strongly affected by her rented allotment, which now dominated her free time. This place-assemblage linked her not only to the physical space but also to the soil, Sun and climate that enabled her to grow fruit and vegetables as an alternative to shop-bought produce.

> We've got potatoes, there's leeks, there's onions, there's garlic, we've got loads of fruit bushes, most of it's in freezer at minute because we've took it all off of bushes. We've got carrots in, peas, I've done all my peas, broad beans, I've done all them, they're all in freezer. I've got runner beans, they're growing, tomatoes, cucumbers, lettuces. . . . We go down most weekends, and we try to get down every day, we need to go every day for watering and stuff, water greenhouses because obviously they don't get the water in the greenhouse. . . . We'll be down there later on, just digging and god knows what, but there's not a lot to do apart from weeding in summer.

The allotment not only affected Billy physically, but also recalled childhood memories of gardening and of her parents. As she now lived in a house with a minimal garden, the allotment had provided Billy with a welcome return to horticulture.

> When I lived at home when we were young my dad always had a garden full of veggies, like our parents and our parents' parents. When I was growing up we always had a big garden. I'd do it with my dad when I was little, so we always had stuff growing. But we've been here over 20 years, and we've never really had much of a garden to do anything in, and for first ten years here we didn't really have a garden.

The allotment-assemblage thus comprised at least the following elements (in no particular order):

> soil; Sun; rain; vegetables; fruit trees and bushes; money; council; house; garden; Billy, husband; father; grandfather; greenhouse and sheds; water; amenities

The physical and emotional affects in this place-assemblage had made the allotment central to Billy's daily life beyond her work as a school cook. She had gradually imported household appliances and amenities, creating an extension to their living space for relaxation as well as agriculture.

> We've got a cooker down there and a fire, we've got sheds and everything and greenhouses where we can sit inside. So you can always pop inside and have a cup of tea, got a gas kettle down there and everything. I've even took my portaloo down there because I can't go on a bucket, so that's down there, a chemical toilet. It's like home from home down there.

The micropolitics of place-assemblages, well-being and sociomaterial dis/advantage

Having unpacked the complex assemblages that produce the affectivity of three specific place-assemblages, we conclude this section by considering how the micropolitics of the affects in these place-assemblages may contribute to well-being and/or sociomaterial dis/advantage. Earlier, we outlined a relational perspective on both 'health' and 'dis/advantage'. This perspective suggests it is inaccurate to consider places or spaces as *causes* of good or poor health, or of dis/advantage, but rather as relations within assemblages that establish opportunities and constraints on what a body can do.

In terms of health, the case studies and other data supplied numerous examples of how place-assemblage micropolitics enhanced physical or emotional well-being. As already noted, the physical affects associated with open spaces near to her home gave Andrea opportunities for exercise and fitness, while Billy's allotment provided psychological and emotional links to a happy childhood. Similarly, a dog and open country near Laura's (#8) home together enabled both exercise and an escape from a claustrophobic house.

> At the weekend we have to get out because if not the four walls drive you mad. It might be going to the woods, again feeding ducks, or like to local farm parks and things like that. . . . From here we've probably got two little side roads and then we get onto the restored pit tip at the back, which is like a country park, and she can be off the lead from there all the way to wherever we want to cycle to.

Alex (respondent #19) and her family spent many holidays and weekends at a static caravan site. This location provided opportunities for many activities enjoyed as a family.

> It's old fashioned in a way, it's just slower, I don't know. We don't race around over there as much. I still shop over there, I still cook, we still clean, we still do, but you don't feel. . . . At the caravan we tend to relax and do things together.

Place-assemblages could also contribute to other dis/advantage. Billy's allotment accorded her and her family economic advantage, as it enabled her to grow most of the vegetables and fruit they consumed.

> It's money more than anything isn't it, it's growing your own. I mean it keeps us fit, I mean my husband likes to go down and look after it, and it's saving us money. I mean I hardly buy any potatoes, don't need to buy any vegetables. I run out of carrots out my freezer about, what I had frozen last year, I didn't run out. I've still got green beans and broccoli in there from last year. I think we run out about March from last year's veg.

Access to local shops or budget supermarkets supplied other respondents (Wanda, #12; Leslie, #28) with opportunities to save money by shopping in cut-price stores, though Leslie concluded that this disadvantaged her in terms of choice and food quality.

> [Budget supermarket] keeps coming out as being really, really good, and we've noticed that there is a significant price difference. But there's less choice . . . whereas we would normally buy reduced fat garlic bread, their garlic bread is garlic bread or not. . . . And we bought their mince to make the chilli con carne, and we'd normally buy extra lean mince, and we had to ladle the fat off afterwards because the difference in what comes off.

A number of the respondents described how negative aspects of their villages or neighbourhood imposed physical, psychological or economic disadvantages on them. Katherine (#11) and Norma (#24) considered that declines in the social and material environment of their immediate neighbourhoods affected them economically and socially.

> There's a lot of houses where people maybe haven't looked after them and it's boarded up and then people who have bought the houses are next to these houses. (Katherine)

> My mother-in-law would like me to move out of [village] because she thinks I live in a deprived area. (Norma)

For both Norma and Gemma (#7), these changes in the environment had led to anxieties about personal safety for themselves or members of their families.

> There used to be lots of old people's bungalows around, but now they're all rented out to one parent families and families on low income. So it's kind of gone a bit downhill, as you can see as you walk round the streets houses are, they're just dilapidated . . . and they're all out there drinking on the front of the gardens and things. So it just makes me feel uncomfortable walking out and about in some places, especially with the little ones. In all fairness if my mum and dad weren't still alive we would move to be honest. (Norma)

> I wouldn't let my kids go out on the street now without me. I don't know, it's just there's a lot more nasty people out there. (Gemma)

We consider the implications of this analysis of place, health and dis/advantage in the following discussion

Discussion

Our analysis of the affectivity of place-assemblages – and the capacities these produce – elaborates two aspects of the new materialist ontology of place that we set out earlier. First, places should be treated not as spatial or spatiotemporal locations with essential characteristics, but rather as assemblages of multiple human and non-human relations (cf. Andrews et al., 2014; Duff, 2014). Place-assemblages cut across dualist conceptions of the natural world as 'material' and the human world as 'social'. A place might affect an individual human by facilitating exercise; by supplying a sense of well-being; by generating an emotion such as fear or happiness; by engendering a recollection of a past happy or disagreeable event; or by accreting a new memory. These various responses have in common that all are affective capacities of the place-assemblage, with material consequences for what a body can do. In a new materialist ontology, 'materiality' thus encompasses not only the physical but also the social, cultural, psychological and emotional.

Second, and consequent upon this first acknowledgement of material affectivity, the capacities of places are always context-specific: contingent upon what other material and social elements assemble with a spatial location. An 'allotment' – that to our respondent Billy supplied a capacity to save money by growing vegetables, to the adjacent allotment-holder might afford peace and tranquillity to write a book, while the next but one is overgrown and unproductive: an embarrassment and a burden rather than an economic or aesthetic boon. This relationality counters any sense that a space or a place may possess inherent or essential attributes that transcend specific circumstances (Massey, 2005: 31), overcoming the stigmatisation of (essentialised) 'places' in many public health assessments (Thomas, 2016). A place is always a place-assemblage of multiple components (relations).

Together, these insights establish a perspective on place-assemblages as foundationally *affective* and *micropolitical*. How places affect bodies will be both disparate (physical, psychological, sociocultural, political etc.), and at the same time contingent upon the other elements within the assemblage. As already noted, what affects one body may affect another entirely differently, or not at all. These place-related affects and their impacts may not be dramatic in themselves, but when spaces or places are sustained elements in the events that make up a life, there is a drip, drip, drip affectivity that over days, months, years or a lifetime may have a profound impact on what a person can do: their capacities.

The case studies document this drip-feed of affects. For Andrea, living near open country was a constant physical and psychological presence in her life – the opportunities that accrued were on-going (though new housing developments may limit these opportunities in the future). By contrast, the negative social effects of the economic deprivation and anti-social behaviour in Rebecca's village drip-fed constraints upon her: physically, psychologically, economically and socially. Furthermore, *how* a place-assemblage affects a body may vary: for Rebecca one day it could pose a physical threat, on another the principal impact might be economic, constraining her capacity to move to a more salubrious neighbourhood by depressing the value of her house.

Earlier in the paper we offered a new materialist perspective on both 'health' and relative dis/advantage. To re-capitulate: 'health' is the 'actual measurable capacity to form new relations (Buchanan, 1997: 82) and a 'quantum of a body's power of acting' (Duff, 2014: 75). Similarly, we suggested that 'tiny dis/advantages' accrue from the capacities produced by everyday interactions with humans, non-human matter and places. This relational and affective ontology undermines efforts toward a neat understanding of 'place' as a cause, and 'health' and/or 'social disadvantage' as outcomes, in studies that explore this association. Rather, places are caught up in complex micropolitical movements within assemblages of human and non-human matter: what human bodies can do are emergent properties of these fluctuating flows of affect.

This suggests that we should stop seeking an independent 'place-effect' upon health and well-being. Instead, places need always to be acknowledged as complex sociomaterial assemblages, in which physical locations interact with multiple other human and non-human elements, often cutting across 'micro' (materially immediate) and 'macro' (contextual features such as economics and politics). These assemblages have equally complex affects, producing a multiplicity of diverse capacities in individuals and collectivities, some but not all of which are conventionally regarded as aspects of health or social position.

In conclusion; we have applied an ethological perspective to suggest that places and spaces are always caught up with many other material and social processes that act on people, individually or at the level of communities or other collectivities. Such an agenda shifts attention from seeking generalising statements concerning place-effects of 'the built environment' or 'green spaces', to seeking to understand the circumstances and contexts in which places and spaces are affective, and the micropolitical consequences of place-assemblages. This research has the potential to inform social policy and public health initiatives to address how place-assemblages contribute to the physical, psychological, sociocultural, economic and political opportunities open to citizens, and explore means to reshape places and spaces to enhance health and wellbeing and address disadvantage and social inequalities.

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Notes

1. Nature/culture dualism is arguably foundational to humanism, colonialism and even the social sciences (Braidotti, 2013: 68; Haraway, 1992: 65; Sundberg, 2014: 33). Scientific

developments in fields such as epigenetics, climate science and assistive technology, and animal/human studies have undermined this duality (Braidotti, 2013: 57–58; Lock, 2020: 25; Ogden et al., 2013; 6–7), while indigenous ontologies similarly reject this distinction (Rosiek et al., 2020).

2. This formulation references new materialist scholarship that has replaced discrete 'gender' and 'race' categories with 'a thousand tiny sexes' (Grosz, 1993) and 'tiny races' (Saldanha, 2006).

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