Architecture and Health Care: a place for sociology

Daryl Martin, Sarah Nettleton, Christina Buse, Lindsay Prior and Julia Twigg

Abstract

Sociologists of health and illness have tended to overlook health care architecture and buildings. This contrasts with medical geographers who have yielded a body of work on the significance of places and spaces in the experience of health and illness. A review of those sociological studies that have studied the role of the built environment in the performance of medical practice uncovers an important vein of work, worthy of further study. Through the historically situated example of hospital architecture, this article seeks to tease out substantive and methodological issues that can inform a distinctive sociology of health care architecture. Contemporary health care buildings manifest design models developed for hotels, shopping malls and homes. These design features are congruent with neo-liberal forms of subjectivity in which patients are constituted as consumers and responsibilised citizens. We conclude that an adequate sociology of health care architecture necessitates an appreciation of both the construction and experience of buildings, exploring the briefs and plans of their designers, and observing their everyday uses. Combining approaches and methods from the sociology of health and illness and science and technology studies offers potential for a novel research agenda that takes health care buildings as its substantive focus.

INTRODUCTION

> So we waited in this awful interior space with neon lights and sad people sitting exhausted on these chairs… and the nurse said, 'Could you come in?' And then we saw this doctor from Edinburgh, and we said, 'Well… how long have I got?' And he said, 'Do you really want to know?' And we said 'Yes we really want to know.' And he said, 'Two to three months.' And we said, 'Oh…!' And then the nurse came up, 'I'm very sorry dear, but we'll have to move you out into the corridor, we have so many people waiting.' So we sat on these two chairs in the [windowless] corridor trying to deal with this business, having two to three months to live. (in Jencks 2010: 11)

The above quotation is an account of the experience of a cancer diagnosis by Maggie Keswick, the founder of a series of support centres, initially in the UK and now extending worldwide, which provides care for people living with cancer and their families. In addition to its all-too-recognizable suggestion of the pinched time allocated for the processing of such information, what stands out in Keswick's account is the rendering of the material environment. She wrote subsequently how buildings designed for health care can often work against the needs of their visitors: 'Overhead (sometimes even neon) lighting, interior spaces with no views out and miserable seating against the walls all contribute to extreme mental and physical enervation' (Keswick 1995: 209). Parallels are found in Mildred Blaxter's (2009) auto-ethnography of a cancer diagnosis, especially around the material environments within which treatment took place. There is a latent spatiality to Blaxter's analysis, especially in her account of taking her body to a range of hospital locations in order to have its different parts appraised by various specialists. The diagnosis of cancer is viscerally troubling; it confirms the presence of disease and invokes *dys*-ease (Leder (1990)); a heightened awareness of one's body. The body in health care settings occupies a complex but somewhat ambivalent position: it is at the centre of everything yet is at the same time oddly displaced, as is evident in Blaxter's sense of fracturing in her treatment and the loss of expertise amongst medical staff for making her feel comfortable. Moreover, *dys*-ease heightens sensory experiences evoked through embodied interaction with the material environment, as is evident in Keswick's recollections of plastic seats, durable shiny surfaces, and harsh neon lighting.

Indeed, there exists a large body of evidence that points to the role of the designed environment in the efficacy of care: floor layouts, noise levels, lighting, single rooms, ventilation, exposure to day light, access to 'green' environments, proximity to windows and so on have all been found to impact upon health outcomes (Ulrich, 1984; Lawson and Phiri 2003; Douglas and Douglas 2005; Daykin *et al* 2008). Curiously however, design and architecture is something to which medical sociologists, and sociologists in general, have paid scant attention. Stevens (1998: 12, cited in Jones 2011: 1) suggests that the sociological literature on architecture would take little more than a day to review, a claim that Jones (2011) maintains still holds. It is surprising that the 'spatial turn' within social science (Soja, 1989; Shields, 2013) has not translated into a sustained analysis of the materiality of buildings; all too often, the social and political effects of architecture are elided in the analysis of their formal and functional qualities (Dovey 2010). Architecture depends on the social contexts within which it is practiced (Till

2009); as Hillier and Hanson suggest, architecture 'is not a 'social art' simply because buildings are important visual symbols of society, but also because, through the ways in which buildings, individually and collectively, create and order space, we are able to *recognise* society: that it exists and has a certain form' (1984: 2). For Jones, sociologists need to craft 'a critical approach to the connections between the architectural field, political power, and the construction, maintenance and mobilization of collective identities' (2011: 1). He focuses on landmark buildings designed by celebrated architectural firms, giving insight into the play of global power (also see Sklair and Struna 2013). As welcome as this focus is, it should not divert us from those buildings that hold and activate meaning in everyday ways.

Foucault's writings on space and place remind us of this. His 'Of other spaces' lecture (1986) offers numerous examples of architectural forms that literally emplace mundane embodied practices, giving rise to his idea of the heterotopic qualities of hybrid and contested spaces and the multiplicities of meaning inscribed onto social spaces (often by marginal groups). Drawing on his notion of heterotopia, Street and Coleman identify hospitals as comprising 'layered space' where 'alternative and transgressive social orders emerge and are contested', alongside and despite the processes of governance designed into the architecture (2012: 5). These layered spaces enfold different temporal registers, where medical pasts, presents and futures, as well as previous visions of future care, are made manifest in material form. Whilst not advancing an architectural determinism, the built environment is, for Foucault, deeply implicated in the power dynamics of societies and their fostering of a guiding 'techne' or governmental rationality (1984: 255). This implies that the analysis of building types should be placed by sociologists within a 'long view' of how particular ways of thinking (about citizenship, about familial relations, about patienthood) are configured by architectural means.

The spatial turn and Foucauldian theory is evident in the work of health geographers whose research meshes with central concerns in medical sociology. We therefore briefly review this literature, before moving on to explore a nascent sociology of architecture and, taking the hospital as an example, examine ways in which buildings give concrete expression to ideologies of health and recursively help to configure medical knowledge. Cultural geographers have generated insights into the landscapes of health care, but we suggest medical sociologists should complement these in order to extend our understanding of how the built environment implicates and embeds ideas, ideologies and knowledge of health and medicine, and in turn may be consequential for those who use them. To date there is an extant literature on the use of buildings but little on the social processes of their production; our focus then is on the role that buildings, at all stages of their production, play in the configuration of the embodied experience of health and illness. A key finding is that there is a lack of, and need for, sociological work on buildings and architecture in the making. Through gathering together these literatures we identify substantive and methodological affordances that could be developed within the sociology of health and illness[i].

PLACING HEALTH GEOGRAPHICALLY: THE THERAPEUTIC LANDSCAPE

Health geographers have explored the therapeutic scope of design, although their focus has been less on the materiality of buildings *per se* than on the salience of space and landscapes. They have examined

how health care settings are experienced and negotiated by patients, staff, and visitors (Kearns and Gesler 1998; Kearns and Barnett 1999; Williams 2007). Examples include Warin *et al*'s study of women's community health centres in Australia as counter-geographies of care to predominant models of privatized general practice (2000); Fannin's study of birthing rooms in US hospitals which serve to reinforce the position of biomedical expertise (2003); Kearns and Collins's analysis of health camps in New Zealand in the social construction of discourses around ideals of healthy childhood (2000); Parr *et al*'s archival research and contemporary interviews with those who had experience of a mental health facility in Scotland (2003), and Laws' account of the appropriation of park spaces by a psychiatric self-help group (2009), serving as a 'therapeutic landscape' in contrast to the alienation the group experienced within purpose-built facilities.

The concept *therapeutic landscapes* captures the physical, social and symbolic dimensions of place, understood as a 'product of the human mind and material circumstances' (Gesler, 1992: 743). To facilitate its empirical application Gesler *et al* (2004) devised a 'matrix' for the evaluation of 'situated knowledges and local cultures'. The concept of therapeutic landscapes has been instructive for those undertaking analyses of services where designers, in consultation with users, have sought to 'build in' contemporary models of care settings such as mental health institutions (Wood *et al* 2012; Curtis *et al* 2007), pediatric services (Adams *et al* 2010) and hospice care (Moore *et al* 2013). Within this tradition, geographers have grounded case studies historically (Andrews and Kearns 2005; Gesler 1993) and within their political contexts, as Kearns and Barnett have demonstrated in their discussion of the branding of a high profile children's hospital in Auckland (1999).

While attending to interpretations of place some researchers have sought to foreground the contribution of architectural structures in social relations. Gillespie's (2002) study of a family planning clinic demonstrated how it is saturated with signals legitimizing exactly who might use different spaces at particular times, with implications for the dynamics of medical encounters. Health care buildings can complicate commonplace assumptions shared by health practitioners and patients alike (Rapport *et al* 2007), an observation that resonates with Twigg's (2006) study of paid care work undertaken in domestic settings when private space becomes a public work place for a paid carer, and where the 'habitus of the home' and the 'logic of service delivery' generate tensions in relation to power relations between carers and those cared for. Bringing care into the home is a precarious business, and conversely transporting the model of the home into institutional care settings creates tensions, as the aspiration to make institutions 'homely' has often failed, not least because such intentions failed to appreciate the embedded nature of place (Hockey, 1999) and confused the specificities of architectural form. These studies highlight a need for sociologists to be attuned to place as well as space.

PLACE SENSITIVE SOCIOLOGY

Prior argues for a sociology of space outwith the 'framework of modern geography' (1988: 86- 87), and Gieryn (2000) calls for a distinct 'place sensitive sociology', cautioning sociologists to avoid letting 'place' become 'something of interest only to geographers, architects, or environmental historians' (463). Place he argues, is not the same as space; for Gieryn, place becomes space when it is 'filled up by people, practices, objects and representations' and, moreover, 'place is not merely a setting or a backdrop, but

an agentic player in the game – a force with detectable and independent effects on social life' (2000: 465, 466). All social activity is 'emplaced' - 'it happens somewhere and involves material stuff' (Gieryn, 2000: 466).

Of course 'material stuff' is examined by medical sociologists as evidenced by the plethora of studies on diagnostic and testing technologies, imaging and visualization technologies, e-health and telecare (Webster 2007). Some studies examine the salience of spatial and temporal flows within clinical spaces in the accomplishment of medical expertise and performance of care, and crucially attend to the agential quality of non human technologies (Lehoux *et al* 2008; Mesman 2009). Rawlings's description of how sterility is achieved collectively in the everyday work of an operating theatre unit augments its analysis of the role of instruments with their spatial arrangements (1989). Similarly, Fox reveals three concurrent 'circuits of hygiene', enacted within the movement of staff, patients and medical objects as they are enfolded through the surgical theatre as a particular spatial form; here the architecture acts as continual prompt, binding its various participants into a 'convenant' of clinical safety and care (1997: 656). However, for the most part, although technologies are understood to be embedded within organizational contexts and spatio-temporalities are acknowledged, the buildings where health care work takes places remain relatively eclipsed in this literature.

Gieryn's (2002) article, 'What buildings do' attempts to address this void. He provides a route beyond the impasse of buildings understood as either constraining structures or only becoming meaningful via actors' interpretations. He points to their 'double reality' (2002; 40); they constrain action and yet, despite their fixed appearance, remain open to interpretation and (re)construction. So, although 'buildings stabilize social life', they 'stabilize *imperfectly*' (35). Through an empirical case study where he follows the construction of Biotechnology Building at Cornell University (CBB) he develops a tripartite conceptual schema which is instructive. *Heterogeneous design* highlights the pliability of the CBB during the design stages; materials and walls come and go as demanded by stakeholders such as architects, engineers, biologists and university representatives. Once built, the CBB is *black boxed* as the politicking of the design process is rendered invisible and the building steers its users in ways they 'hardly notice' (60). With time the CBB is malleable through processes of *interpretative flexibility* and thus 'discursively remade'. Gieryn's study is pivotal conceptually and empirically because the focus is on the building itself from conception through to its construction, and the study focuses not merely on interpretations of space but on the ways in which the building is ceaselessly changing. The building is at once fluid and agential; it is not only a repository of meanings but is generative of actions and reactions. As Latour and Yaneva argue, the ostensible fixity of buildings when perceived as static objects belie their ceaseless movement when thought of as projects subject to the contingencies of clients' demands, planning issues and the recalcitrance of building materials and technologies (2008).

Yaneva and Guy's (2008) special issue of *Science Studies* on architecture demonstrates the 'analytical potential' of STS approaches for understanding how social relations are 'built into' architecture through explorations of the heterogeneous processes and practices involved. For example, Yaneva (2008) followed the renovation of a 17th century Viennese building, a process she refers to as 'architecture in the making' (12), revealing this to be an unpredictable process characterised by 'drifts', 'surprises', 'ruptures' and 'modification of details'. Design plans were adjusted in relation to negotiations between

actors, building restrictions, budgetary constraints and, crucially, the agency of the building itself. It is evident that a multiplicity of factors – voices, ideas, materials, knowledge - enters the fray of buildings in the making (Yaneva 2009). Although none of the studies in this special issue were of health care buildings, there is scope in health settings to examine how beliefs and ideologies enter the work of architecture and buildings as they are conceived and constructed – and, in turn, how architectural practice helps to perpetuate and co-construct these beliefs, ideologies and the configuration of medical objects.

In fact, for medical sociologists, Gieryn's study of the CBB holds further interest. Architecturally it gives form to a historical juncture whereby the biological sciences were removed from the confines of the university hospital, and given a designated place to formalize research networks within commercial sectors. Thus the organizational form stabilizes the translational activity of scientific research as orientated more towards patents than patients, while disrupting the traditional notions of bench to bedside, and so is bound up with other shifting patterns of hospital design itself.

THE HOSPITAL: AS AN ARCHITECTURAL EXPRESSION OF MEDICAL VALUES AND HEALTH CARE PRACTICES

In the 'Introduction' to his collection, *Buildings and Society: essays on the social development of the built environment,* King argues that there is an inseparable 'relationship between social and cultural forms on the one hand, and built and spatial forms on the other' (1980: 3). This is an observation that prompts sociological questions:

> 'what are the cultural, social, scientific, welfare, technical and other presuppositions ('theories') assumed in its layout? What activities does it accommodate? What are the social divisions represented both by the building itself and by the organization of its internal space? What is the basis of the social categories used and are such categories represented in the spatial nomenclature? What are the corresponding rules/regulations governing the use of such spaces, who enforces them and how? How is the 'architectural style' to be explained? What symbolic aspects are used, from where are they derived and what do they represent? To whose universe of meaning do such symbolic aspects refer? (King, 1980: 13)

Historians of health care architecture have grappled with these questions. The US writers Brandt and Sloane (1999), for example, detail how medical values 'are written on the hospital's facades and spatial arrangements', such that tracing historical patterns of hospital design offers 'understanding not only [of] this particular institution, but also the broader history of medicine, science, and popular culture in the twentieth century' (1999: 281).

A rare example within medical sociology is Prior's (1988) study of hospital architecture in the nineteenth century. As an architectural expression of historically contingent ideas about the causation, treatment and management of disease, hospital buildings are more than mere backdrops to medico-social relations, but are discourses complicit in the constructions of medical objects and bodies, both patients and professionals. Buildings are 'as solid a form of discursive enunciation as are texts or speech' (Prior 1988: 92) and architectural plans 'are essentially archaeological records which encapsulate and imprison

within themselves a genealogy of medical knowledge' (1988: 93). For example, the construction of the Pavilion hospital in the 19th century (identified by its open corridors, windows to facilitate the flow of air and light, and toilets positioned near to exits to allow the expulsion of foul air) emerged alongside miasmic theories of disease. Additionally, these designs, and the practices they fostered, recursively advanced the professional credibility of three primary groups: doctors, whose understanding of disease at that time the plans enshrined; nurses, whose management of the wards the spatial design facilitated, and architects, whose talents for marshaling space to clinical ends were made manifest in these buildings (Forty 1980: 80-82). Thus hospitals are implicated in changing patterns of medical practices and professional positioning, as much as they are subject to evolving architectural philosophies and building techniques. Writing in a more contemporary era Hughes' observations of a casualty ward reveals how particular workplaces and areas make manifest power dynamics within medical practice and the 'increasing differentiation of locales in the modern hospital' (1988: 16), with the authority of nurses in A&E making for a more complex composition of power amongst staff groups than might be considered in the traditional thesis of professional dominance residing with doctors. These multiple processes are entwined as the hospital shifts shapes from Renaissance palatial models through to panoptical designs, the pavilion models of the Victorian era and the mega-hospitals of the contemporary period (Verderber 2010: 9-43; Prasad, 2008).

Consequently, the shifting configurations inscribed within hospital plans help us trace the shaping of medical objects. As Blaxter's (2009) experiences of fragmented care in the hospital indicate, these institutional settings are demarcated by 'divisions of the anatomical system' (Prior, 1992: 77) and categories of patient. For example, from the second half of the 18th century patients began to be differentiated by age, with younger patients placed in a 'children's ward', overseen by the distinct specialty of pediatrics, and later placed in separate children's hospitals (Prior, 1992). As children were first demarcated within the general hospital, the insane were placed within a separate architectural space altogether. In contrast to the 'wards for the sick', the insane were to be placed within the 'cells' of the asylum (Prior 1988:103). Here again notions of madness were inscribed in buildings designed as mechanisms for the containment and control of 'inmates'. As ideas of madness gave way to notions of mental illness, correspondent shifts were found in the design, for example, of the day centre that was neither wholly integral to the hospital, nor wholly integral to the community.

Throughout the 19th century, hospitals as secularized and moralized civic institutions were funded by benefactors keen to invest in a 'healthy' society through the inculcation of discipline as much as through the application of 'modern' medicine. As they admitted socially mixed populations, the classification of patients according to economic position was configured in spatial design: 'separate wards not only isolated patients from possible contagion; they also separated them by social class and ethnicity' (Brandt and Sloane, 1999: 285). The generic hospital designs that superseded the Pavilion layout followed more expedient methods of building as the 20th century progressed, such as the 'matchbox on a muffin' model developed in the first decades in the post-war period, where 'the ward tower [was] set on a wider, lower block of accommodation' and maximized space when used within the restrictions of urban settings (Hughes 2000: 21). Within a British context, the most significant hospital building programme of the post-war period was largely achieved through the 'Nucleus' model of a cruciform shape, housing

complete departments over one thousand square metres and up to three storeys, which could be reproduced with relative ease throughout a site (Monk 2004: 12-14). This design template 'achieved considerable savings in consultant costs, capital expenditure and numerous costs' associated with starting each specific hospital build in an entirely bespoke way (Monk 2004: 12). In Foucauldian terms, this offers a literal rendering of political economy (2008), where the maximum effects of governing space are established through the minimum of expenditure: of money and of management. In reading the historical trends in hospital design in this way, we do not mean to suggest that these designs *necessarily* resulted in more efficient and ordered populations, of patients and professionals – we agree with Street and Coleman (2012) that the hospital remains a space open to differential occupation by various groups. Nonetheless, such design templates indicate an aspiration towards embedded logics of efficiency still discernible in the props and practices of the contemporary hospital (White *et al* 2012).

Sloane and Sloane's (2003) book *Medicine moves to the Mall* captures the shift to the contemporary period, wherein commercial imperatives are articulated in prominent ways. Architectural features of the shopping mall, the hotel and the home are imported into hospital design.

> In the explicit desire to obfuscate the architectural boundaries between the resort hotel, the shopping mall, and the hospital is a powerful implicit message that medicine is a business, medical care is a commodity. This is not a new development, but only recently has it enlisted the powerful symbolic logic of architecture. (Sloane and Sloane, 2003: 116)

This blurring of boundaries is key to understanding this increasingly anti-institutional aesthetic. Attempts to replicate the feeling of home through the use of floral wall paper and soft furnishing in specialist units seek to address the embodied alienation articulated by patient groups. Similarly the hotel model seeks to attend to the comforts of the patient. Retail space - shops and services - are available in increasingly diversified hospital lobbies and, similarly, ambulatory services are being dispersed throughout community settings. In the USA the so called 'doc in a box' – a satellite primary care stand alone clinic linked to large hospitals but located in commercial spaces – is emblematic of this reconfiguration.

Although drawing on examples from the US, Sloane and Sloane's analysis finds empirical support elsewhere. In New Zealand, Kearns and Barnett describe the evolving form of accident and medical clinics blending seamlessly into the consumer landscapes of Auckland, and presenting similar advertising strategies as a form of communication to their users or, more saliently, customers (1997). The development of medical environments in which the mall aesthetic and market transactions dominate results in 'contrived milieu in which the *form* appears to rival the *function* in importance', and, indeed, might even act to 'essentially mystify the processes of care, cure and healing' (1997: 178-9). In the UK, Douglas and Douglas's research into hospital interiors identify the prominence of cafes and shopping malls, but report that patients found these foster feelings of normality in the midst of their recovery (2005: 268). This enmeshment of hospital, home, hotel and mall forms goes further, with Fottler *et al*'s research indicating that the benchmarking of hospital environments is increasingly based on comparators from the hospitality industry (2000). Their research offers a four step protocol for designing the 'healthscape' and creating the 'healing environment', for example through the 'clean

uniforms and proper grooming' of staff (2000: 102), and reflects an aspiration, at least in advanced economies, to commission new hospitals built in styles that do not resemble previous forms of hospital design. Bromley's (2012) exploration into architects' and planners' operationalization of person centredness in hospital design in the US, reveals how they sought to create an 'impressive prestigious building' on a 'human scale' to 'project hope, healing and human-ness' (1060). Design features include 'ample space, homely environments, and hotel-like services' (1057). One participant commented, 'the beauty of the architecture is, there's nothing "hospital" about it.' A sociological reading of these developments might point to their congruence shift with neo-liberal modes of subjectivity in which the patient is reconstituted rhetorically as a consumer, an identity which works alongside that of a responsibilised citizen within health care systems (White *et al* 2012; also Rose 2007). The hospital as a hotel and/or home is less a site of common citizenship enfolded through the collectivised welfare state, than a heterogeneous and increasingly privatized arena of hybridised sites orientated towards consumption. Within broader neo-liberal contexts, readymade models of care could be found not in the hospital or care settings themselves but in other contemporary modes of space and 'hospitality' that privilege customer care within a range of commercial sectors (Prasad 2008).

Thus far, we have seen how histories of the European and North American hospital form move away from religious origins to the civic institutions of the 18th and 19th centuries, to the hygienic and economic norms made manifest in later styles, before reaching the contemporary period's borrowing from other architectural models such as the home, the airport, the hotel and the shopping mall (Gesler *et al* 2004; Heathcote 2010). Throughout, the hospital retains a status as a moralizing space in addition to its role as the technological locus of biomedical knowledge. Yet this should not imply that all hospitals enact biomedical norms in predictable and generic ways; as van der Geest and Finkler observe, the hospital takes on 'different forms in different cultures and societies', in its role as 'a domain where the core values of a culture come into view' (2004: 1995). Within a Western context, the importation of the design models of the hotel and the home are consonant with wider societal narratives aiming, quite explicitly, to adjust the feeling of the hospital to counter the logic of scientific rationality as set against personalized experience.

Thus the attuned awareness of the person, understood holistically rather than a fragmented collection of failing body parts (Blaxter 2009) is consistent with the hospital's heterotopic quality (Street and Coleman 2012) and STS analyses such as Mol's (2002) account of multiple bodies, multiply enacted in multiple spaces. But even here, in these studies buildings are 'settings'; backdrops that are silent in the analysis as attention is given to the technologies deployed within populated spaces. But buildings, as Gieryn (2002) reminds us, are 'technological artifacts' like 'any other machine or tool, are simultaneously the consequence and structural cause of social practices' (41). In the context of health, Armstrong's (1985) analysis of general practice throughout the twentieth century is salient. Changes to their professional craft were enacted through the different spaces in which doctors practiced; from rooms within general practitioner's own homes to health centres wherein 'a new analysis of illness became possible', through which the patient's body and illness became increasingly fragmented and subject to the expertise of different specialists (1985: 660).

TOWARDS A SOCIOLOGY OF HEALTH CARE ARCHITECURE: AGENDAS AND METHODS

Earlier in this essay we cited King (1980) who identified a series of questions that relate to the study of buildings. Although nearly 35 years ago it is evident that these questions, certainly in relation to health care settings, still warrant attention. Methodological developments arising from the integration of medical sociology and STS afford analytical approaches that are useful for addressing questions that speak to the analysis of buildings through all stages of their trajectory. Questions such as: How are ideas about health, welfare, and clinical care realised in building design and construction? What forms of interpersonal interactions, medical encounters and socio-technical practices do buildings accommodate? In their eventual uses, what forms of social classification and division do buildings help to enact? And how do these processes intersect at various times throughout the life-course of a building, in its making and re-making?

To complement historical analyses that demonstrate how architecture materially manifests ideologies of health we need to shift the lens of enquiry and open the black box between the expectations of those who commission buildings and that which gets built. This requires that we examine architectural practices as they occur. To complement evaluations of buildings in use we should join the dots back to these buildings in their nascent and half-constructed states and ask: How are buildings conceived, designed and produced? What are the means by which architects and their collaborators (e.g. builders, developers, NHS and care trusts, charities, and regulators) translate and negotiate ideas of health, wellbeing? How are architectural briefs prepared by those who commission health care buildings and how are they subsequently implemented?

If we acknowledge architects as professionals who play a role within the design and provision of health care, we can also ask: How do they configure users of health places, be they staff, patients, clients, visitors and so on? What types of health related knowledge are sourced and from where? Architectural scholars, such as Pallasmaa (2011), offer us a view of architectural work that articulates the varieties of embodied, existential, intuitive and instrumental knowledge and skills deployed in practice; recent research on the working practices of other actors engaged in different parts of the construction industries has done much the same (Pink *et al* 2013). To date medical sociologists have barely engaged with this literature. There are however resonances with research on the work of other health professions (Prior and Annandale 2005; Nettleton *et al* 2008) and so an exploration of the work of health care architects seems fitting.

Recent writings by Ingold and Pink are instructive. Ingold calls for studies of architecture in the making because existing research is 'almost non-existent' (2013: 10). There is merit in undertaking what he refers to as research 'with architecture' rather than simply doing a study 'of architecture'. Architecture is 'not so much *about* as *by means of* buildings' (Ingold 2013: 10 emphasis in original). Ingold's approach chimes with Pink's (2009) 'ethnographic practice' orientation which urges researchers to not only produce 'thick description' but also work collaboratively with study participants to co-produce knowledge. It is a methodological approach used in recent studies on building construction to make visible the 'spaces and practices of work that are otherwise hidden' (Lyon, 2013: 24). This 'coproduction research', 'where researchers and practitioners generate new knowledge together' (Pink *et al* 2013: 3), draws together the different 'ways of knowing' of those involved in the design and construction of buildings. Sociologists thus should follow architects as they work and move through proximate settings,

as architecture is invariably a collaborative endeavor between architects, their clients, engineers, product manufactures, cost-estimates, developers, construction workers (Pressman 2014) and, of course, buildings themselves. Critical for an effective sociology of, or rather 'with', architecture is the observation that analysis must not be limited to people but must include non-human agents, materials and technologies.

Most obviously we should anchor research in documentary sources, perspective drawings, sketches, elevations, computer assisted designs, planning applications and even contracts. 'Paper architecture' (Prior 2013), in particular, offers a variety of entry points into the sociological study of buildings. Indeed, as Table One illustrates, it can serve as a starting point for an analysis of how individuals (especially architects) conceive of buildings, how people use them, how buildings manifest conceptualizations (of madness, children, disease, etc), as well how buildings can act back upon their producers and users so as to structure everyday practice. In that respect we need to analyse relevant documents not only in terms of their content but also in terms of how they function.

- Table One about here -

We need to analyse documents as they are produced *and* consumed. We should be cognisant too of the agency of documents; they are not neutral but loaded with assumed meanings; neither inert nor fixed, but situated products, generative of embodied practices and representative of social categories (Prior 2003). Architectural drawings are best thought of as 'cosmologies in the making' (Houdart 2008: 48), virtual renderings of buildings and space, but also of how human and non-human bodies fit into the picture. Their visualization of the future trajectories of buildings and space, Houdart suggests, constitute 'a serious matter', with social implications: 'Architects, while designing, digitalizing, copying, and cutting and pasting images, manipulate social spheres and give birth to new ones by testing and submitting new social configurations' (2008: 48). 'To render drawings in design means', Yaneva and Guy suggest, '*to render* particular worlds' (2008: 5). Plans, and indeed buildings themselves, are agential, both facilitative and constraining. Latour and Yaneva caution against the architectural plan arresting our awareness of the complexity of how buildings are brought into being (2008: 81): thinking about plans in conventional ways, as archival statements fixed in their meanings, risks losing the small politics of construction they enact. A fixed understanding of the plan may serve to elide conflicts between clients, the constraints of planning regulations and financial budgets, and the negotiations between skilled and unskilled labour on site, before we even consider those who may use the eventual building.

Working with architectural plans requires a move from thinking of the 'archive-as-source' to the 'archive-as-subject' (Stoler 2002). As Prior suggests, 'it is the anthropology of use, more than the literary study of content, that should guide the social scientist in matters of research into 'documents of life'' (2003: 104). Thus we may think of the documentary source as a libretto:

> Taken on its own a libretto rarely adds up to much… a libretto is not intended to be analysed in isolation. It demands to be analysed in action. How it is integrated into the dramatic action on stage, how it relates to the melody and rhythm of the music, how it is *performed* – all of these are of primary importance. (Prior 2003: 173)

And so it is with the ordinary architectural plan; we should be opening these to scrutiny in order that we trace their effects on the ground, and, to mix our musical metaphors, understand better the 'place ballets' that their built forms give rise to (Seamon 2013).

Seamon's analogy of the place ballet to capture the 'interaction of individual bodily routines [as] rooted in a particular environment, which often becomes an important place of interpersonal and communal exchange, meaning and attachment' (2013: 206) builds on Hillier's methodologies of 'space syntax' as a means to capture the way spatial layouts inform and guide experiences of place (1996). For Hillier, the layout or *configuration* of a city (and, we hold, a building) holds a 'deep structure' that has the potential to bring people together or segregate them (1989: 5, in Seamon 2013: 206); this makes his theories important for a phenomenological understanding of place and embodied understandings of architectural affect. Space syntax studies can involve empirically based descriptions that capture the movement and dwelling of individuals in particular spaces; they are observant of participants and the ways in which they use their environments. Although this approach can be viewed as instrumental and structuralist (Seamon 2013: 206), there may be ways in which the techniques can be compared with other areas, such as the records of surgical theatres noted above. Whilst it was not a space syntax study, Fox's (1997) post-structuralist ethnography charts the influence of spatial layout on the collective achievement of hygiene, and its sensitivity to the role of non-human objects within this. We need *observant* methodologies and theories that allow us to 'transform the static view of a building into one among many successive freeze-frames that could at last document the continuous flow that a building always is' (Latour and Yaneva 2008: 81).

We must resist ascribing a deterministic role to the intention of the designers and those who orchestrate clinical settings, be they professionals, patients or those carrying out the unremarked-upon work of crafting these buildings into being. Visual methodologies seem particularly apposite to capture the movement of buildings in their making and ceaseless re-making. Gieryn (2000) argues place sensitive sociology needs 'to do sociology in a different key – a visual key' (483) and 'sociologists could become more adept with maps, floor plans, photographic images, bricks and mortar, landscapes and cityscapes, so that interpreting a street or forest becomes as routine and as informative as computing a chi-square' (483-4). Lyon also argues for visual ethnography in 'documenting aspects of bodily experience, including of work, which are difficult to narrate' (2013: 35); her photographic montages of construction workers as they work offer an insight into the embodied labour that is just one hidden aspect in the black-boxing process that the eventual building facilitates. From the user's perspective, Radley and Taylor's photo-elicitation study documenting patients' experience of recovery provides a novel means of achieving a richer knowledge of place than might be found in the typical post-evaluation records of a building (2003). Accompanying the participants as they produced data allowed for a 'move from an interest in the meanings of images alone to an attempt to understand what has been made visible and why' (Radley and Taylor 2003: 79).

Whilst we must be careful not to lapse into what Pallasmaa (2005) calls the ocular-centric paradigm that privileges the visual over other sensory apprehensions of place, the visual approaches by Lyon and Radley and Taylor demonstrate that this need not necessarily be so. Radley and Taylor's work moves us beyond the visual register and focuses attention on the materiality of life on the ward, as well as its

spatial ambience, thus offering a means of capturing plural experiences, understandings and memories of place. Lyon develops the idea of 'incidental attention', a way of looking that is 'almost casual, not trying to see everything but to absorb the sensory feel and activity of the space, and taking photographs as part of that process' (2013: 26). As we saw at the outset of this review individuals occupy architecture in ways that are multi-sensual and emotionally sensitive, alert to the atmospherics of place. From an architect's perspective, Pallasmaa calls for a re-sensualised architecture, 'through a strengthened sense of materiality and hapticity, texture and weight, density of space and materialized light' (2005: 37); as sociologists interested in the architecture of health care, the least we can do is to develop methodologies that allow us to respond in kind.

CONCLUSION

It has been our argument throughout this review that medical sociologists should take seriously the observation that, to date, we have little sense of how the architectural forms of health care buildings are arrived at. Furthermore, although we have a wealth of research on the knowledge, perceptions, and practices of health providers, architects as a group of professionals whose role within the design and delivery of healthcare provision is crucial are rarely explicitly acknowledged nor investigated. And yet understanding their designs is critical to a fully rounded analysis of how ideas and ideals of medical objects, roles and practices are established and reproduced. Our medical futures are shaped by expectations and normative models of care imported and translated into the buildings of the present, which are themselves often articulated with reference to past forms of clinical practice, and the spaces within which they were forged.

The future is a constant present in the design and delivery of health care that is imbued with promises and expectation of what that care could, or should, be. Thus the study of architecture, which simultaneously incorporates documents of future visions, practices and everyday use, and studies of traces of the past in health care places, can only be instructive for medical sociologists. Our example of hospital architecture highlighted some historical instances of changing discourses of patienthood and professional expertise, and, moreover, contemporary trends which prompt the need for sociological analysis. If nothing else, the migration of architectural elements from the hospitality and retail sectors into the design of hospitals should raise questions about the wider ideologies of health being disseminated in our systems of medical and social care. It is not simply the case that the architecture of health care reflects wider moves towards neo-liberal forms of subjectivity, whereby patients are construed as consumers and responsibilised citizens; rather, it is our argument that architecture plays a more active role in shaping and configuring such changes. Whilst we do not hold a position of architectural determinism, agreeing with Street and Coleman's articulation of buildings as 'layered space' inhabited and understood in differential ways (2012), we do nonetheless wish to promote the architecture of care as a field of study laden with moral value, political significance and sociological interest. Explorations of architectural work and the production of health care buildings therefore comprise an avenue of research for sociologists of health and illness.

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Table One "*Paper architecture" as an entry point for sociology* (Prior, 2013)

Focus/	**Human Beings**	**Structures**
Designs/Plans	**(1)** ***Designers (architects)*** ***Styles***	**(2)** ***Representation*** ***Categories***
Use	**(3)** ***Consumption/Use of Space***	**(4)** ***Constraints, conscriptions, buildings as 'actors'***

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[i] Methodologically we undertook a scoping review rather a systematic literature review, as is appropriate for research that seeks to map and identify research fields and its gaps (Arksey and O'Malley 2005: 21). Several strategies were deployed. First, we searched the Web of Science and Scopus databases, in addition to Google Scholar, using a variety and combination of search terms, in line with the need for flexibility – rather than pre-defined fixity - of search terms and the iterative - rather than linear - process in scoping studies across different databases (Arksey and O'Malley 2005: 22). Primarily, our terms combined architecture, sociology, health, design, buildings, cultural geography, STS, and embodiment. Second, we searched the back files of key journals that we judge to be prominent titles within the field of medical sociology (for instance: *Sociology of Health and Illness; Sociology; Science Studies; Health; Health, Risk and Society; Social Science & Medicine* and *Health & Place*). Third, we used a snowball method to follow links cited within the sources we unearthed, using their reference lists as the basis for further study. Additionally, the combined knowledge of the five authors that spans a diversity of theoretical and methodological expertise facilitated the research process. Much of the material found is not cited, as they derive from outwith the key sources for medical sociology - the interdisciplinary scope of the latter two journals listed above generated important studies which originate from outside this field. Although we draw upon sources from health geography and architectural history from these journals, we delimit our discussion to pursue a sociological orientation, so that we might identify the potential for and content of a sociology of health care architecture.