Social Geography II: Space and Sociality

Elaine Lynn-Ee Ho
elaine.ho@nus.edu.sg
Department of Geography & Asia Research Institute
National University of Singapore

Abstract: By drawing together recent geographical literature on assemblages, infrastructures and topology, this progress report examines how spatial ontologies and epistemologies of power have evolved in social geography. This report argues that the three forementioned approaches each illuminate certain qualities of the relationship between sociality and space, allowing researchers to advocate for a particular way of seeing and knowing the world. The three approaches are distinctive but may not be mutually exclusive. The report concludes by emphasising the need to consider what might be elided through our choice of spatial vocabularies and reflecting on how spatial theorising can promote social justice.

Keywords: Infrastructure, Assemblage, Topology, Social justice, Spatial theorising

Introduction

About a decade ago, a lively debate on "the question of the 'social' in the field of Social and Cultural Geography ensued in the same-named journal in response to a seeming disconnect between social and cultural geography and the extension of core concerns in social geography to other sub-disciplines in Geography (see Smith et al., 2011). Today geographers draw on a range of conceptualisations in cultural geography and other sub-disciplines to inform analyses of core concerns in social geography. Rather than "what some perceive as the creeping depoliticisation of social geography" (see Peake, 2011:760 for an account), the porosity across sub-disciplines in Geography can be considered a strength that expands understandings of social geography, its study of how power relations are constituted through social relations and space, and the sub-discipline's commitment to socio-spatial justice (see Hopkins, 2021). How then have the spatial ontologies and epistemologies of power evolved in social geography in connection with those in other geographical sub-disciplines?

Inherent in the study of social geography lies an interest in the relationship between sociality—namely the social relations and interactions which constitute and are constituted by social and cultural organisation (Ho and Hatfield née Dobson, 2011:709)—and space. In recent years, more social geographers have sought to capture the complexity of socio-spatial life and its connections with human and non-human actants, components and events through engagement with the relational turn in geography, and with it, assemblage and infrastructural approaches. This progress report further suggests that topological thinking—an approach that has featured more prominently in political and urban geography to date—presents opportunities for social geographers searching for conceptual tools to excavate how relational proximities are established or dichotomous relations are troubled in the way that power extends its "quiet reach" (Allen, 2020) through sociality and space. As shown below, the three approaches flag distinct socio-spatial dimensions, but they are not mutually exclusive in the way that social geographers have deployed them to inform and enrich their analyses of social life.

Assemblages
Assemblage theory brings together analyses of human and non-human actants to examine how these components come together or apart at particular junctures of space and time, emphasising processes that are heterogeneous, contingent and interdependent (Allen, 2020; Anderson and McFarlane, 2011). Social geographers have engaged with assemblage theory to study how objects, forces of nature and institutional structures shape social identities, practices and relations spatially. They share an interest in how assemblage thinking allows for studying "distributed, relational, and networked agency as well as an openness to processes of emergence and becoming" (Campbell et al., 2021:1022).

Writing about familyhood, Price-Robertson and Duff (2019) argue that an assemblage approach decentres the anthropocentrism that has characterised extant studies of family life. They highlight how relationships such as childrearing, kinship or intimacy "do not depend on human capacities exclusively, and must be understood in terms of complex associations between human and non-human entities, and the ways these associations affect the assemblage's functions and capacities" (Price-Robertson and Duff, 2019:1039). For example, by studying how mothers and young children who use prams negotiate moving around the city, Clement and Waitt (2019) draw out not only the spatial constraints that mothers and children experience, but also how pram use constitutes the "capacities of bodies to act and be affected" (Clement and Waitt, 2019: 263). By foregrounding the corporeal challenges that mothers and children face when using prams to navigate urban spaces, Clement and Waitt advocate for children's right to the city as spatial justice.

Assemblage theory has also served as a productive conceptual lens for social geographers who study care relations. In Power's (2019) work on women experiencing housing precarity, she considers how capacities of caring-with (i.e. the ability to meet basic needs) are assembled through engagements with housing cultures and policies, the practices of landlords and real estate agents, and individual houses. Her analysis foregrounds how the potential for or constraints to caring-with extends across the spaces in which private decisions and governance frameworks about housing are made. Power argues that treating the assembly of these components as housing assemblages "opens up a conceptualisation of domestic caring that is political and social rather than individual, autonomous and private" (Power, 2019: 769). In Ho et al. (2020), the authors compare the care assemblages of citizen and immigrant older adults to show how differences in legal statuses and social networks impact each group's capacity to negotiate the spatio-temporal constraints they face in managing self, peer and intergenerational care. Combining assemblage theory with GIS analysis, Ho et al. trouble the fixity of models of activity spaces to argue that capacities to care can be made more resilient through state provisions for flexible care arrangements. For Frazer (2020) who studied refugee support, paying attention to how care "emerges through the provisional coming-together of material, ideological and affective forms" (Frazer, 2020:7) illuminates the way that spaces of urban belonging in the city are actively and reiteratively carved out for refugees and volunteers alike. These writings on care as assemblages trouble static perspectives of what care is and where care takes place.

Within writing on education and pedagogy, scholars have used assemblage theory to analyse how learning "always carries a deterritorialising potential" (Kullman, 2015:263), drawing in new assemblage components that transform the assemblage itself. For Kullman who studied traffic environments as spaces of learning, conceptualising learning as pedagogical

assemblages shows that "learning is not only about the acquisition of existing knowledges and skills but also about inventing new ways of relating to the world and composing its material" (Kullman, 2015:263). In another study on university students' distance learning in Africa, Gunter et al. (2020) point to how spaces of learning are linked to home and work and constantly assembled through the flows of material objects and curriculum content. The authors remind us that disconnections can arise from the disaggregated and distributed nature of the university during distance learning, such as when students have unequal access to the internet, computers and mobile phones.

Work on assemblages has also sought to capture how social difference is formed and transformed. In Lancione's (2021) study of migrant homeless people, he argues that race is constituted contextually through the entanglement of human and non-human bodies in affective everyday encounters, whether these are actualisations or the potential intensities of an event. Departing from framing social difference through the lens of intersectionality, an assemblage approach towards social difference is attuned to the constantly changing processes through which heterogeneous social relations hold together or come apart, the entry of new elements, and of conjunction or disjuncture (Anderson and McFarlane, 2011).

With its emphasis on contingency and flat ontology, assemblage theory has been critiqued for eliding more hierarchical forms of power and systems ordering social life (e.g. Saldanha, 2012). Drawing upon actor-network theory as an assemblage approach, Campbell et al. (2021) argues that combining an assemblage approach with participatory research and contact zone theory can help address concerns about the limits of flat ontology at eliciting aspects of structural power and social inequality. By focusing on how a disaster site has been refashioned for community gardening, the authors show that networked relationships can stimulate sociability and encounter, even if structural inequality persists. However, for another group of social geographers, infrastructural thinking provides a different spatial lexicon for capturing how hierarchical forms of power and systems constitute socio-spatial formations.

Infrastructures
Infrastructural approaches have emerged as a popular way of framing social geography concerns in recent years. Infrastructure has been used as descriptor, metaphor or perspective in such writings. As a descriptor, the term "infrastructure" refers to "the vast physical and technical lattice of roads, tunnels, railways, public transit networks, airports, dams, waterways, sewers, electricity wires, pipes and telecommunication cables that are rolled out across space to satisfy society's increasing desire for connectivity, communication and exchange" (Siemiatycki et al., 2020:298). Infrastructure gives rise to circulation, and in some cases, promises of progress (Larkin, 2013). However, infrastructure is more than a design solution or objects (Gurang, 2021:105). It consists of and is constituted by social practices (Alda-Vidal and Browne, 2019). Moreover, the geographical distribution of infrastructure is unequal, creating social privilege or disadvantage (even dispossession), connectivity or disconnectivity, and inclusion or exclusion across different social groups.

As a metaphor, the term "social infrastructure" (McFarlane and Silver, 2017:463) has been used in writing by social geographers to frame how physical design, objects, services, programs, events and processes come together to constitute social life. Latham and Layton (2020) discuss how the social infrastructure of everyday sports and fitness practices—such as parks, schools and community spaces—emerge and evolve in cities to aid kinaesthetic practices that lead to health, wellbeing and connectedness, allowing individuals and

communities to flourish. For van Melik and Merry (2021), the library is conceptualised as a site of "infrastructuring" wherein organising lunch meetings, cultural events, and classes to stimulate encounters become ways of repurposing the library into a type of social infrastructure to enhance community wellbeing. Likewise, McQuaid et al. (2021) focus on how older adults constitute the connective tissue of social infrastructures that anchor urban life, including expressing agency to socially navigate (Vigh, 2009) policies, the built environment and intergenerational relations (see also Wignall et al., 2019). These writings on social infrastructure tie together the tangible spaces and intangible events, processes and relations that make up urban citizenship practices and the goals of expanding inclusion and wellbeing.

As a perspective, an infrastructural approach seeks to decentre certain prevailing units of analyses in existing studies to foreground other actants. Lin (2020) further emphasises that an infrastructural perspective should give attention to how anticipated and unanticipated events continuously "fuel the making and unmaking of geographies" (ibid, 1772). In migration and mobility studies, an infrastructural perspective is used in Kleibert's (2022) research on offshore higher education campuses to shift the prevailing focus from migrants, their families and communities towards studying how migration or mobility brokers (including campuses) operate as and within institutions and networks (see also Xiang and Lindquist, 2014). For Barua (2021)— writing about more-than-human geographies—an infrastructural perspective is an ontology that seeks to decentre anthropocentrism in favour of giving greater attention to the infrastructures populated by a "non-human habitus" (Barua, 2021:1469) of animals, but which can have a bearing on human life or abandonment.

Several studies on infrastructures foreground the production of new socio-spatial vulnerabilities. For example, Siemiatycki et al. (2020) argue that men dominate key roles within the infrastructure sector and infrastructural projects are frequently premised on masculinist visions that privilege "imperial vision, grand territorial ambitions and the 'mastery of nature'" (Siemiatycki et al., 2020:301). In a study of water access in Bangladesh, Sultana (2020) observes that water insecurity affects women more than men because of disruptions to their ability to fulfil the daily household needs for which they are held responsible. Similarly, Datta and Ahmed (2021) contend that a lack of access to safe and functioning infrastructures across urban spaces inflicts different forms of "intimate violence" (ibid, 68) on women. For Gurung (2021), infrastructural road projects in Nepal's underdeveloped Karnali region could produce uneven geographies of development by disadvantaging traders and shopkeepers whose places of livelihood are bypassed by the new roads.

Even as infrastructural writing retains a sensitivity to the hierarchical orderings of society and how systems orientate social life, several scholars writing in this vein have concurrently incorporated assemblage thinking into their analyses. For instance, Datta and Ahmed (2020) argue that material and digital environments in cities should be seen as "intimate infrastructures" and these also function as assemblages that are qualitatively "relational, provisional and intersectional" (Datta and Ahmed, 2020:75) in the way they become entwined with people's lives. For Prouse (2021), the circulation of emotions and the affective dimensions of infrastructures—such as racialised threat and fear—hold together an assemblage of people, territories, and objects in the infrastructural upgrading project at the low-income favela she studied. The vocabularies of infrastructures and assemblages draw out different qualities of the relationship between sociality and space. While infrastructure captures system connections and hierarchical power, assemblages draw out nuances of

emergence, exteriority and potentiality. Topological thinking provides another conceptual tool to capture distinctive registers of the relationship between sociality and space.

Topology
Topological thinking cuts across a range of spatial thought such as actor-network theory, assemblage theory and the volumetric and vertical geographies associated with infrastructures (Secor, 2013; Harris, 2015; McFarlane, 2016; Müller and Schurr, 2021). While topological thinking has been more prominent in political and urban geography, it holds potential for working through the power relations observed in writing by social geographers too. As Allen (2011:318) argues, "topology represents an opportunity for geographers to think again about how it is that events elsewhere seem to be folded or woven into the political fabric of daily life, or about how powerful actors, including non-humans, register their presence, despite their physical absence".

Possibly, extant emphases in topological writing on "governments, authorities and political organisations" (Allen, 2020:408) has led to it being adopted more by political and urban geographers than social geographers. However, power or the ability to influence others— what Allen (2020:409) terms as the "quiet registers of power"—permeate the everyday processes of social life in lived space. As Harker's (2014) work on ordinary topologies shows, territory and territoriality are shaped by aspects of quotidian life such as housing, services and familyhood which are topics studied by social geographers too. Topological thinking provides social geographers with the tools to consider how the subject and lived space (Secor, 2013) constitute one another in ways that could trouble seemingly dichotomous spatio-temporal conditions such as near/far, fixity/flow, territorialised/deterritorialised, absence/presence, past/present/future and more (see also Mitchell and Kallio, 2017).

Combining assemblage theory with topological thinking, de Jong and Steadman (2021) show how gendered territories take shape through offline and online spaces of craft beer events and place-making. The authors argue that masculinist craft beer events could feel exclusionary to women but online techniques inviting women-only groups to gather during the event allowed for "a more feminised territorialisation of space to unfold" (de Jong and Steadman, 2021:14). Such acts of reterritorialisation and solidarity in the near and far thus challenge—even if only temporarily—gendered power geometries in urban landscapes. Also writing on gender relations, Bissell and Gorman-Murray's (2019) research on fly-in-fly-out (FIFO) work and family life, surfaces how the mobility of male FIFO employees physically immobilises their female partners who remain in the domestic sphere, entrenching the power geometries of gendered household divisions of labour. Although Bissell and Gorman-Murray do not address topological thinking directly, they refer to how "oscillations of presence and absence" (Bissell and Gorman-Murray, 2019:717) accentuate strains in maintaining familyhood across distance, including encounters with episodes of disorientation when the mobile partner returns and experiences disconnection with events that have seemingly transpired at another space while he was away from home. Bissell and Gorman-Murray (2019) remind readers of the ethical responsibility to create hospitable conditions for those who experience disorientation.

Topological thinking has also started to feature in research on ageing. Barron (2021) urges researchers of ageing to adopt "more complex, topological understandings" of the lifecourse (Barron, 2021:609), such as "by attuning to how a body's capacities – to think, feel, do, and so on – are reconstituted through relations which extend beyond an encounter, folding into other times and places" (Barron, 2021:601). She reminds readers that although the sensory

elements of seniors' everyday experiences are anchored in the present, these are deemed to be significant because they draw in multiple temporalities of the past and the future across the lifecourse. Research by Pratt and Johnston (2021) further illustrates the topological dynamics of ageing and care through their study of dementia care facilities that have been set up in the Global South to meet the demand for eldercare arising from infrastructural failures in the Global North. Challenging assumptions that proximate care and ageing-in-place means better care, their work shows how amidst the ambivalent and messy relations of family separation, care migration "invites us to rethink family, kinship and intimate care (Pratt and Johnston, 2021:529). They highlight that a slower pace of care in Thailand and the way care work is (re)valued there can be contrasted with the speeding up of commodified care in Global North countries, thus providing a different lens to appreciate care work as skilled work elsewhere. Topological analyses thus draw out the multiplicity of what it means to be related through care and the shifting forms that care takes in different space-times (see also the special issue edited by Hanrahan and Smith, 2020), at times providing a double-take on perceived conventional power geometries in our social worlds.

Pratt and Johnson's study on older migrants also demonstrates the way that topological thinking provides a productive lens to work through how seemingly different social groups and dissimilar spaces exist alongside the same surface of a Möbius-like spectrum, and generate effects (and affects) when the opposite ends interface during or through migration. As another example, Datta and Aznar's (2019) study of debt-financed migration reveals how migrants borrow from and borrow for transnational kin, showing that debts are not only "financial but also social, moral and emotional relations" (Datta and Aznar, 2019:304) that fold into one another as migrants straddle debt and credit relations across different space-times. Topological approaches compel researchers to work through a "Möbius relation of continuity between opposites" (Cockyane et al., 2020:198) that appear to be paradoxical yet are in fact generative of the relationships and conditions that could either perpetuate exclusion and exploitation or potentially advance more just social relations.

Conclusion
The spatial concepts and lexicon that we use impacts which dimensions of geographical thought are identified and drawn out for analysis in our writing. Assemblages, infrastructures and topology each elicit certain qualities of the social world, allowing researchers to foreground certain directions of inquiry and map out arguments that advocate for a particular way of seeing and knowing things. Assemblage theory enables one to express an openness to contingency, exteriority, the actual and emergence, and the capacity of bodies to affect and be affected by objects, events and processes. The infrastructural turn in human geography (re)centres an attentiveness to systems, hierarchical power and structural inequalities. For some scholars, the infrastructural perspective provides an explanatory power which assemblages has been criticised as lacking, while continuing to capture how the "moving parts" of infrastructure can result in change and transformation. Topological thinking in turn captures how power acts from a distance even when it is seemingly absent, and reminds the researcher to destabilise assumed dichotomous relationships and conditions.

While some scholars adhere to only one school of thought, others adopt an eclectic approach by using these different spatial concepts and lexicon flexibly (sometimes incorporating mediating ones too). However, as McCann (2011:145) reminds us, "if concepts are to be assembled for particular purposes, they must be brought together carefully, recognising their provenance and situatedness, compatibilities and incompatibilities, and their capacities and

limits".[1] Thus we also need to ask, first, what kind of relations, events or processes may not be captured by each of these spatial languages? This question probing into the yet-known is possibly best answered through research that excavates the multi-dimensional experiences of our study subjects and their lived spaces. Second, moving beyond description, how can these spatial concepts and lexicon be put to work to advance social geography's commitment towards promoting social justice?

Here I take the example of migrant workers to briefly reflect on the ways in which analysing infrastructural, assemblage and topological power can contribute multidimensional insights into how social injustice manifests across different space-times and unexpected twists in how more socially just practices are promoted. Research by migration scholars—including geographers—has revealed the way that hierarchical and networked infrastructures in the regulatory and commercial domains can exercise systemic and enduring forms of power that compromise the rights of migrant workers (e.g. Mosselson, 2021; Zhang and Axelsson, 2021). In particular, for migrant domestic workers, infrastructural forms of injustice (e.g. lack of recognition or minimal regulation over domestic work) operate alongside a public-private divide that devalues domestic work in the eyes of employers and society, thereby contributing to "multiple intersectional domains" (Ho and Ting, forthcoming) of disadvantage and oppression. Assembled alongside these institutions and actors are international organisations, non-governmental organisations and migrant alliances that seek to counter exploitative practices but which are themselves constantly morphing in response to changes in regulatory or commercial practices (Wee et al, 2019;).

But advocacy and interventions contained within one country can only have limited traction because the transnational context of migration necessitates a topological appreciation and concomitant actions to address how power operates in hierarchical and networked, as well as proximate and distant ways (Mitchell and Kallio, 2017). Axelsson and Hedberg's (2018) study of Thai wild berry workers in Sweden reveals how the Swedish government sought to improve the working conditions of such workers by extending a regulatory reach into Thailand through imposing requirements on Thai staffing agencies. This study illuminates how more socially just practices need to grapple with cross-cutting regulations, constraints and opportunities in a spatially complex world where multiple social actors have the capacity to affect and be affected by one another in Mobius-like ways. While some social geographers may participate directly in promoting social justice through action-oriented research, even those who do not can provide information and lend inspiration by carrying out grounded research that brings to view the manifold ways in which social justice concerns are being addressed around the world.

---

[1] See also Martin and Secor (2014) and Lata and Minca (2016) for cautionary reminders about historicising the spatial concepts we use and for conceptual precision in the cross-fertilisation of spatial concepts.

References

Alda-Vidal C and Browne AL (2021) Absorbents, practices, and infrastructures: Changing socio-material landscapes of menstrual waste in Lilongwe, Malawi. *Social & Cultural Geography*: 1–21.

Allen J (2020) Power's quiet reach and why it should exercise us. *Space and Polity* 24(3): 408–413.

Anderson B and McFarlane C (2011) Assemblage and geography: Assemblage and geography. *Area* 43(2): 124–127.

Axelsson L and Hedberg C (2018) Emerging topologies of transnational employment: 'Posting' Thai workers in Sweden's wild berry industry beyond regulatory reach. *Geoforum* 89: 1–10.

Barron A (2021) More-than-representational approaches to the life-course. *Social & Cultural Geography* 22(5): 603–626.

Lata IB and Minca C (2016) The surface and the abyss: Rethinking topology. *Environment and Planning D* 34: 438–455.

Barua M (2021) Infrastructure and non-human life: A wider ontology. *Progress in Human Geography* 45(6): 1467–1489.

Bissell D and Gorman-Murray A (2019) Disoriented geographies: Undoing relations, encountering limits. *Transactions of the Institute of British Geographers* 44(4): 707–720.

Campbell LK, Svendsen ES, Reynolds R, et al. (2021) Material and social relations in a coastal community garden assemblage. *Social & Cultural Geography* 22(7): 1019–1041.

Clement S and Waitt G (2018) Pram mobilities: affordances and atmospheres that assemble childhood and motherhood on-the-move. *Children's Geographies* 16(3): 252–265.

Cockayne DG, Ruez D and Secor AJ (2020) Thinking space differently: Deleuze's Möbius topology for a theorisation of the encounter. *Transactions of the Institute of British Geographers* 45(1): 194–207.

Datta A and Ahmed N (2020) Intimate infrastructures: The rubrics of gendered safety and urban violence in Kerala, India. *Geoforum* 110: 67–76.

Datta K and Aznar C (2019) The space-times of migration and debt: Re-positioning migrants' debt and credit practices and institutions in, and through, London. *Geoforum* 98: 300–308.

de Jong A and Steadman C (2021) (Re)crafting belonging: cultural-led regeneration, territorialization and craft beer events. *Social & Cultural Geography*: 1–19.

Frazer R (2020) Care, chaos and cosmos: territorial refrains of refugee belonging. *Social & Cultural Geography*: 1–19.

Gunter A, Raghuram P, Breines MR, et al. (2020) Distance education as socio-material assemblage: Place, distribution, and aggregation. *Population, Space and Place* 26(3).

Gurung P (2021) Challenging infrastructural orthodoxies: Political and economic geographies of a Himalayan road. *Geoforum* 120: 103–112.

Hanrahan KB and Smith CE (2020) Interstices of care: Re-imagining the geographies of care. *Area* 52: 230–234.

Harker C (2014) The Only Way Is Up? Ordinary Topologies of Ramallah: Ordinary topologies of Ramallah. *International Journal of Urban and Regional Research* 38(1): 318–335.

Ho, ELE and Hatfield née Dobson, ME (2011) Migration and everyday matters: Sociality and materiality. *Population, Space and Place* 17(6):707–713.

Ho ELE, Zhou G, Liew JA, et al. (2021) Webs of Care: Qualitative GIS Research on Aging, Mobility, and Care Relations in Singapore. *Annals of the American Association of Geographers* 111(5): 1462–1482.

Ho, ELE and Ting W (2021) Informality during migration, "conversion" within and across national spaces: Eliciting moral ambivalence among informal brokers. *Transactions of the Institute of British Geographers* 46: 944–957.

Ho ELE and Ting WC (forthcoming) Geographies of transnational domesticity: Migration risks, intersectional disadvantage and mitigation strategies by foreign domestic workers from Myanmar, *Professional Geographer*.

Hopkins P (2021) Social geography III: Committing to social justice. *Progress in Human Geography* 45(2): 382–393.

Kleibert JM (2022) Transnational spaces of education as infrastructures of im/mobility. *Transactions of the Institute of British Geographers* 47(1): 92–107.

Kullman K (2015) Pedagogical assemblages: rearranging children's traffic education. *Social & Cultural Geography* 16(3): 255–275.

Lancione M (2016) Racialised dissatisfaction: homelessness management and the everyday assemblage of difference. *Transactions of the Institute of British Geographers* 41(4): 363–375.

Larkin B (2013) The Politics and Poetics of Infrastructure. *Annual Review of Anthropology* 42(1): 327–343.

Latham A and Layton J (2020) Kinaesthetic cities: Studying the worlds of amateur sports and fitness in contemporary urban environments. *Progress in Human Geography* 44(5): 852–876.

Lin W (2020) Eventual infrastructure: Momentous geographies of technoscience production. *Annals of the American Association of Geographers* 110: 1770–1786.

Martin L and Secor A (2014) Towards a post-mathematical topology. *Progress in Human Geography* 38: 420–438.

McCann E (2011) Veritable inventions: cities, policies and assemblage: Veritable inventions. *Area* 43(2): 143–147.

McFarlane C (2016) The geographies of urban density: Topology, politics and the city. *Progress in Human Geography* 40(5): 629–648.

McFarlane C and Silver J (2017) Navigating the city: dialectics of everyday urbanism. *Transactions of the Institute of British Geographers* 42(3): 458–471.

McQuaid K, Esson J, Gough KV, et al (2021) Navigating old age and the urban terrain: Geographies of ageing from Africa. *Progress in Human Geography* 45(4): 814–833.

Mitchell, K and Kallio, K (2017) Spaces of the geosocial: Exploring transnational topologies. *Geopolitics* 22 (1): 1-14.

Mosselson A (2021) Cities of sanctuary in environments of hostility: Competing and contrasting migration infrastructures. *Antipode* 53: 1725–1744.

Müller M and Schurr C (2016) Assemblage thinking and actor-network theory: conjunctions, disjunctions, cross-fertilisations. *Transactions of the Institute of British Geographers* 41(3): 217–229.

Peake L (2011) In, out and unspeakably about: taking social geography beyond an Anglo-American positionality. *Social & Cultural Geography* 12(7): 757–773.

Power ER (2019) Assembling the capacity to care: Caring-with precarious housing. *Transactions of the Institute of British Geographers* 44(4): 763–777.

Pratt G and Johnston C (2021) Dementia, infrastructural failure, and new relations of transnational care in Thailand. *Transactions of the Institute of British Geographers* 46(3): 526–539.

Price-Robertson R and Duff C (2019) Family assemblages. *Social & Cultural Geography* 20(8): 1031–1049.

Prouse C (2021) Affective registers of favela infrastructure in Rio de Janeiro. *Social & Cultural Geography*: 1–20.

Secor A (2013) Urban Geography Plenary Lecture Topological City. *Urban Geography* 34(4): 430–444.

Saldanha A (2012) Assemblage, materiality, race, capital. *Dialogues in Human Geography* 2: 194–197.

Siemiatycki M, Enright T and Valverde M (2020) The gendered production of infrastructure. *Progress in Human Geography* 44(2): 297–314.

Simone AM (2004) People as Infrastructure: Intersecting Fragments in Johannesburg. *Public Culture* 16(3). Duke University Press: 407–429.

Smith DP, Browne K and Bissell D (2011) Reinvigorating social geographies? A 'social re/turn' for a changing social world: (re)opening a debate. *Social & Cultural Geography* 12(6): 517–528.

Sultana F (2020) Embodied Intersectionalities of Urban Citizenship: Water, Infrastructure, and Gender in the Global South. *Annals of the American Association of Geographers* 110(5): 1407–1424.

van Melik R and Merry MS (2021) Retooling the public library as social infrastructure: a Dutch illustration. *Social & Cultural Geography*: 1–20.

Vigh H (2009) Motion squared: A second look at the concept of social navigation. *Anthropological Theory* 9(4): 419–438.

Wee K, Goh C and Yeoh BSA (2019) Chutes-and-ladders: the migration industry, conditionality, and the production of precarity among migrant domestic workers in Singapore. *Journal of Ethnic and Migration Studies* 45(14): 2672–2688.

Wignall R, McQuaid K, Gough KV, et al. (2019) 'We built this city': Mobilities, urban livelihoods and social infrastructure in the lives of elderly Ghanaians. *Geoforum* 103: 75–84.

Xiang B and Lindquist J (2014) Migration Infrastructure. *International Migration Review* 48(S1): 122–148.

Zhang Q and Axelsson L (2021) Channelling through bureaucracy: How migration intermediaries and state actors (re)shape Chinese migration to the Swedish restaurant industry. *Geoforum* 123: 14–22.