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Critical Commentary: Repopulating density: COVID-19 and the politics of urban value

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Abstract
How might concepts of 'value' and 'population' illuminate the present and future of urban density? The COVID-19 pandemic prompted a public debate on density in the city. While some initially blamed density for the spread of the virus, others rightly cautioned against those claims. As the pandemic progressed, an imaginary of density-as-pathology gave way to a more nuanced geographical understanding of the urban dimensions of the crisis, focused on connections, spatial conditions, domestic 'overcrowding' and poverty. Throughout, an interrogation and reflection on urban density and its future unfolded, throwing into question the historical relationship between 'value' and 'population' in understandings of density. I argue for a new politics of value based on shifts in three interconnected domains – governance, form and knowledge – and identify implications for research on density in urban studies.

Keywords
COVID-19, density, overcrowding, population, value

摘要
"价值"和"人口"的概念对于城市密度的现在和未来而言有何意义呢？新冠肺炎大流行引发了关于城市人口密度的公开辩论。虽然有些人最初将病毒的传播归咎于密度，但也有人正确地对这类说法提出了警告。随着疫情的发展，那种"密度即病理"的想法让位于在城市层面对这次危机的更细致入微的地理认知，这种认知强调联系、空间条件、家庭"过度拥挤"和贫困等因素。贯穿始终的是，本文对城市密度及其未来进行了追问和反思，并对"价值"和"人口"在密度理解方面的历史关系提出了质疑。我主张基于三个相互关联领域（治理、形式和知识）转变的新价值政治，并确定了城市研究中密度研究的意义。

关键词
新冠肺炎、密度、拥挤、人口、价值

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Introduction

The COVID-19 pandemic placed a new focus on density in the city, and in three ways:

1. *The 'outside': risk and transient urban densities*. In the early period of the pandemic, compressed urban spaces in general – streets, transit systems, anywhere in which densities might surface – were linked in public and political imaginations to increased risk of infection. The immediate aim was to rapidly reduce, avoid and temporarily suspend the transient urban densities of the city. This was associated with a 'density pathology', in which densities 'out there' were rendered dangerous. The response, given that the risk was predominantly attached to a 'moving target', was to instigate, through lockdowns, the biggest episode of urban de-densification in global history. Over time, this density pathology imaginary gave way to a *process imaginary*: a shift from urban densities in general to a more specific focus on particular connections and interior spatial conditions.
2. *The 'inside': risk and domestic densities*. As the pandemic unfolded, it became clear that there were higher levels of infection, hospitalisation and death in areas in which poverty, often along lines of class, race and ethnicity, coincided with 'overcrowding' in the home. While this 'crowding imaginary' was projected onto the domestic inside, the entangled nature of urban geographies – for example, in respect to occupations with higher rates of social interaction (shops, deliveries, public transit, refuse collection, etc.) – also meant ongoing political and public concerns about the movement of the virus beyond these sites, for instance via the transient urban densities that were re-appearing as lockdowns were lifted. To prevent this, a set of responses were used: upscaled testing and contact tracing, targeted regulations (local lockdowns, limits on gatherings, social distancing), spatial architectures (redesigned commercial spaces, new sanitary regimes) and altered everyday rhythms (working from home, online shopping, new habits of movement).
3. *Revaluing density*. All of this prompted a wider debate about what the city gains from dense urban living, including: whether cities ought to continue with the policies of densification that have been pursued over recent decades; what the public policy response should be; and what the future of density – transient and residential – might become. For some commentators, the immediate perceived risks between the virus and high densities suggested that cities should place less value on densification strategies (Kahn, 2020; Kotkin, 2020). For others, the fact that poorer 'overcrowded' homes were more exposed demands a collective revaluation of urban living, and specifically extensive improvements to urban housing, infrastructure, services and healthcare in those areas (Richardson, 2020).

The result is a moment in which we are collectively asking searching questions about density. Density has been the focus of news reporting, editorials and features in mainstream media ranging across outlets from *CNN* and the *BBC*, to *The New York Times*, *The Times of India* and *The Guardian*; it has provoked statements from politicians and heated debate in social media; it has been the subject of reports and public statements in international institutions including the World Health Organisation, the World Bank and the United Nations; and it has been the focus of numerous blogs, commentaries, webinars and podcasts by think-tanks, non-profits, mainstream and critical urbanists, and civil society groups.

This has been an expansive debate, and it has taken with it four measures of density ranging across different aspects of urban living. In order to track both how density has been debated as the pandemic unfolded and how the four measures might be reconfigured in the future, I will keep a hold of all four in the arguments I make here: density as numbers of people *living in an urban area*, often a neighbourhood, district, ward or county; density as numbers *living in a house*, that is, 'overcrowding'; density as numbers *gathering at sites*, including city centres, urban beaches and parks, shops, bars, cafes and restaurants, and so forth; and density as numbers *moving through space*, including transport systems, streets and the in-between spaces of city-centre shopping, and so on. While these four measures have long been associated with understandings of density in policy and public imaginations, the pandemic brought them to the forefront of public debate, intensified concerns around them and their inter-relations, and more vividly revealed their inequalities. Together, they represent a larger interrogation of the nature and value of high-density urbanism and in this context critical urbanists have a role to play in shaping the debate and future trajectories of density in the city (Pitter, 2020).

I argue that it is useful to focus on the ways in which density has been differently *valued* and *revalued*. In the next section, I explain what I mean by value – and its links to a concept of *populating* and *repopulating* density – and set out how this focus advances research in urban studies. Then, I move on to examine the public debate that emerged in the early stages of the pandemic and reflect on how it – and the urban geographies and imaginaries connected to it – evolved and shifted. I then present an agenda for revaluing density, anchoring the discussion around three intersecting lines: governance, the politics of urban form, and knowledge politics. A critical part of what is at stake here is the question of how density comes to be known, including whose knowledge counts in urban governance and in the shaping of built form. As I will argue, there is a history of urban activism that entails an alternative set of knowledges of density, and these have become more present in public imaginations as a result both of the pandemic itself and of its entanglement with other moments, especially *Black Lives Matter*.

Before the pandemic, building high-density cities was seen to generate multiple benefits. What that 'high-density' might precisely look like was varied and debated but a broad consensus was emerging around the merits of pursuing it: tackling the climate emergency through compact low-carbon urbanisms with amenities and jobs within walking distance; generating clusters of talented people to enable 'collision densities' that foster creativity and innovation; building socially mixed communities of dense housing ranging from low- to mid- and high-rise structures; and so on (McFarlane, 2020a; Perez, 2020). The pandemic provoked a debate on the politics of value that accompanies this dominant consensus and the socio-economic exclusions that follow from it. By publicly revealing and intensifying inequalities that were already there, COVID-19 exposed the urgency of investment needed in lower-income dense neighbourhoods, amongst people too often de-linked from dominant imaginaries and aesthetics of what 'walkable', '15-minute', 'low-carbon' and 'innovative' urban densities might be.

I aim to extend existing research on density in urban studies in two ways. First, by examining how a focus on concepts of 'value' and 'population', and their mutual constitution, can help us to understand the nature and politics of urban density. Second, by offering both a critical account of the material and discursive role of density in the COVID-19 pandemic, and an agenda focused on tracking and transforming conceptions of density (building on existing work in this area, including Angel et al., 2018; Boterman, 2020; Connolly et al., 2021; McFarlane, 2016, 2020a; Perez, 2020). A revaluing of density will help ensure that poorer groups are less exposed to future health crises, curb exclusive forms of densification that price out urban majorities, and generate a wider and more pluralised archive of knowing, imagining and seeing density and its futures.

Value-population: Remaking density

Here I set out an agenda to revalue density by repopulating it. I use these two concepts – revalue and repopulate – as mutually constitutive, and their relationship drives my arguments. By *value* I am signalling a politics that emerges from the attachment of particular kinds of worth, importance and concern to density. Those attachments have different origins and routes, change over time and are often contested. They are shaped in relation to a *population* of some sort, where 'population' is understood through characteristics of composition, temporality and spatiality that instantiate different kinds of density: the crowd, the mass, the rabble, the mob, the gathering, the audience, the bustling neighbourhood (and the links to some notions of the 'slum' or 'ghetto') and so on. Population here, then, carries a double meaning: both the *quantitative number* of people occupying a space for a duration of time (the topographical), and a *qualitative value* that is attached to that occupation (the topological); in other words, value is the qualitative element of framing and seeing a given form of population. The topological is a qualitative value constituted both in the particular moment and expression of density, and through the ideologies, political economic restructuring and (dis)investment, plans and regulations, and cultural politics that historically shape it, formed across different spatialities (McFarlane, 2016).

As a relation of the quantitative and qualitative, value has been central to the history of how different expressions of high density are understood in research, policy and practice. Throughout urban history, for example, the notion of the 'mob' has been used by elites and those in power to describe what they see as an unthinking, angry mass, requiring control, or denunciation, or some form of rescuing through reason. We see this at work, for example, in conservative commentator Murray's (2019) bestseller *The Madness of Crowds* – which tracks the movement of the 'mob' online, especially to Twitter – and its lineage extending through Trumpian condemnations of *Black Lives Matter* protests, Rumsfeldian objections to Occupy protestors, Thatcherite dismissals of industrial strikers, and so on through history (see, e.g., Jukes' (1991) *A Shout in the Street*, and Borch's (2012) *The Politics of Crowds*). Compare that with changing understandings over time and space of other expressions of density, such as a crowd at a stadium, a mass at a festival, an audience in a theatre, a congregation in a Church, Temple or Mosque, or a march or occupation in a city centre public space: each of these forms of populating urban space comes to be seen and understood through different kinds and contestations of value (McClelland, 1989; Roskamm, 2017).

The history of the city is bound up with a politics of revaluing expressions of density. Across the urban world, dominant portrayals of the 'slum', 'ghetto' or 'favela' have often imaginatively and discursively connected density to social threats and ills, from crime and disease to gangs, drugs, pollution and even poverty itself (Mayne, 2017). De-/re-densification strategies have often been caught up with racist and class-based prejudices (McFarlane, 2020a, 2020b; Perez, 2020). In the USA, for example, zoning has historically operated with urban political economies and cultural inequalities to push poorer and often Black residents into under-invested high-density areas, while lower-density and often predominantly White areas have enjoyed better housing and public space provision (Ahlfeldt and Pietrostefani, 2019; Hunter and Robinson, 2018).

Density has been variously valued and devalued in all sorts of ways, including through attachments of alienation, anxiety or loneliness, or in exaltations of the drama and 'buzz' of city life (Borch, 2010; Laing, 2017). For one of the most influential writers and poets of urban modernity, Baudelaire (2010 [1863]), the 'crowd' – a particular expression of density: ebbing and flowing, fugitive and changing, singular and multiple – was both a primal 'family of eyes' and increasingly disciplined by deepening state power (Berman, 2010 [1982]: 152). For Jacobs (1961: 223), dense, socially and materially diverse urban areas were 'the source of immense vitality', the generator of 'a great and exuberant richness of differences and possibilities.' The normative historical tendency to equate dense cosmopolitan environments as desirable, and socially homogenous, sparsely dense areas as less so, is itself a form of valuation that derives in part from Jacobs' legacy (DeVerteuil et al., 2019). A different example of value at large is influential economist Glaeser's (2012: 247) socioeconomic argument against sprawl, and his much debated and sometimes controversial celebration of the 'magical consequences' of concentration that 'make us more human', in which he called on policymakers to incentivise tower-block densification (for a critique, see Graham, 2016; Peck, 2015).

Value and population here are not simply descriptors or material conditions, they are *concepts*: particular ways of seeing, claims and ideas about the nature of things and how they should be. The relationship between value and population is a dynamic field, composed of shifting attachments, political framings, spatial manifestations and temporal registers. In this dynamic field, what we see over time and space is that density, and different expressions of it, are variously *re*valued and *re*populated in mutually co-constituting and sometimes profoundly politicised ways.

Connecting value to understandings and debates on density is not itself new, and value itself is a deeply politicised term in urban policy, practice, activism and thought. We are by now familiar with the ways in which the city is increasingly turned for financial speculation and extraction, whether through real estate markets or the wider generation of new realms of value in the face of capitalist anxieties of devaluation (Fields, 2018; Knuth, 2020; Knuth et al., 2019; Merrifield, 2014; Stein, 2019). The intensified global generation of economic value from urban land and air – always at once topographical and topological – has given rise to a more general territorial logic, from London and Manchester to New York and Mumbai, in which city governance turns more on the economic potential of sites rather than residential socialities and ecologies (Chen, 2020; Goldman, 2011; Schindler, 2017). At worst, the value of urban density becomes reduced to capital accumulation (Livingstone et al., 2021). The result is often sociospatial polarisation, as increasing numbers of residents – especially in the world's larger cities where urban inequalities tend to be most pronounced and growing – are priced out of swathes of the city and forced into often dense and under-serviced lower-income neighbourhoods in which other forms of value accumulation are at work, from payday lending to small-scale infrastructure and housing commodification (Alvaredo et al., 2018; Atkinson, 2020; Graham, 2016; Mayne, 2017).

And yet, there has always been more at work in talk and practices of value; it has never been entirely colonised by capitalist measure (Massumi, 2018; Livingstone et al., 2021). The 'urban', after all, features in all kinds of ways in generating value: a gathering that operates in productive and often inventive ways; a political terrain of contesting state spending decisions; a material resource for political activism or creative expression; a set of socioeconomic experiments in city participatory budgeting or municipal socialism; or a postcapitalist economy of self-provisioning, gifting, caring, savings collectives, worker cooperation, feudal enterprises and reciprocal informal markets (Gibson-Graham, 2006; Simone, 2018).

Revaluing density demands both critically engaging with how people are thrown together within dominant relations of power in economy, culture and polity in the repopulation of urban space, and creating spaces and possibilities to shape the city and its futures in alternative ways. What I am trying to add to the research here, in terms of the urban studies debates on density, is both the importance of attending to and tracking the mutual constitution of concepts of value and population, and the fact that the COVID-19 pandemic – by starkly revealing the inequalities of cities and urban space – generated a public debate about the pros and cons of dense urban living in the round, thereby presenting a pivotal moment through which to shape – and repopulate – the larger density agenda.

COVID-19's urban geographies

In an article in March 2020, the *New York Times* argued that pandemics are 'anti-urban', a piece summed up by its quote from epidemiologist Steven Goodman that 'density is really an enemy' (Rosenthal, 2020: no page). The high death toll in New York, the initial epicentre of the coronavirus outbreak in the USA, led Governor Andrew Cuomo to tweet that 'there is a density level in NYC that is destructive.' Cuomo captured the tone of early debate on density and COVID-19 in his portrayal of New York as a victim of its own density, its inhabitants facing increased risks from the city's sheer 'throwntogetherness', to use Massey's (2005) term: 'I touch this table – the virus could live here for two days. You come tomorrow, I'm gone, you touch that spot … In New York City, all that density, a lot of people are touching a lot of spots, right? Park bench, grocery counters. Just picture the city in daily life' (Cuomo, quoted in Rosenthal, 2020: no page). A piece in *Associated Press* speculated that because in New York 'residents live in large multi-unit buildings, many with small elevators and tight hallways', and given that 'sidewalks are choked with walkers and commuters who flow in and out of the city's robust subway system', there will be higher rates and numbers of infection, hospitalisation and death than in, say, more dispersed Los Angeles (Melley, 2020: no page).

In other cities that were initially badly impacted by COVID-19, including Milan and Madrid, density was often identified as the progenitor of transmission. Urbanist Kotkin (2020: no page) argued that 'high density living' was central to the crisis from the start, 'from the pandemic's genesis in crowded, unsanitary urban China to the much higher rates of hospitalisation and death in large cities.' The key focus of these early positions was the *transient* densities that bubble up in the city each day, and the answer that emerged was to avoid or reduce them, most obviously through systematic nationwide lockdowns. An imaginary of *density-as-pathology* was at work here, connected to a particular 'sanitation syndrome':

a geographical imagination of the city 'out there' as so many sites of potential contamination (McFarlane and Silver, 2017; Swanson, 1977).

In some cities, this pathological view of density was expressed not just in relation to transient busy spaces, but also to dense neighbourhoods identified as potential areas of high infection. Residents of informal neighbourhoods in Mumbai, for example, were subject to police violence, intimidation, forced quarantine, containment zones and stigmatisation (Indorewala and Wagh, 2020). In South Africa, the government used 'heat maps' to identify 29 areas for 'de-densification', lower-income 'informal settlements' that were to be, in the words of one minister, subject to 'relocate and decant' (Poplak, 2020: no page). There was to be no consultation. One activist described 'de-densification' as 'a fancier word for forced eviction' (Poplak, 2020); here, the pandemic was used as a vehicle for depopulation, and asserted a longer politics of devaluing particular densities.

In other instances, the sanitation syndrome became co-opted and hybridised with spurious claims about immigration, crime and terrorism. In the USA, the right-wing think-tank, the Cato Institute, produced an angry rebuttal of density in the city – whether in the form of public transit or housing – and invoked the September 11th attacks to depict a country under siege. 'The 9/11 attack had no effect on urban planners' demands that we pack ourselves into denser and denser cities', the Institute wrote, but, they claimed – in echoes of older security and planning models that partly drove US suburbanisation – density 'makes us more vulnerable to terrorist attacks' and to 'novel diseases', as well as 'crime, invasions of privacy and traffic accidents' (O'Toole, 2020). As Cotright (2020: no page) at City Observatory has put it, 'the associating fear of disease with density is reviving an old anti-urban meme: the "teeming tenements" theory of public health. We'd all be somehow safer if we just lived on large lots in bucolic hamlets.'

Meanwhile, more moderate voices attacked plans for city densification. For example, California's proposals for housing densification linked to transit-oriented development were criticised as routes to future pandemic spread (Kahn, 2020). The flipside of this density-as-pathology imaginary and its sanitation syndrome is the idea that low-density spaces are safer from contamination. As Boterman (2020: 2) has written, COVID-19 'plays into an old adagio of the polluted, dangerous and overcrowded city versus the pure and clean countryside.' This is reflected in data from real estate companies suggesting growing interest in lower density towns and rural locations, a suggestive hint at what Katz (2020) has termed 'reverse urbanisation' (Barker, 2020; Hamidi et al., 2020). Across these cases, the pandemic provoked shifting concerns, questions and attachments that co-constituted the relations between value and population, many of which are older concerns given a new urgency and potency.

This density pathology, then, is deeply political, caught up with all kinds of contested urban histories and prejudices, and has taken different forms globally. It is also grossly oversimplified in both its causality of blame and its conception of infection geographies. As a result, it progressively gave way to a *process imaginary*: a more nuanced geographical understanding of the pandemic and its urban dimensions, focused less on densities-at-large and more on particular spatial connections and conditions. This transition from over-simplification to process imaginary was driven by a deepening – if always partial – understanding of the geographies of infection and the nature of the virus that followed the initial de-densification moment. It is not that public debate became universally well-informed but that the intense daily media reporting, the circulation of information over time through social and other networks, and the gradual intertwining of politics with science – especially epidemiology and virology – propagated a changing appreciation of the role of density (see, e.g., Roberto Esposito in Christiaens and De Cauwer, 2020).

Process imaginary

Even in the early stage of the pandemic, there were counter-examples to the 'blame density' discourse and its attendant sanitation syndromes, including densely populated cities where authorities had relative success in managing the virus, such as Singapore, Hong Kong, Taipei and Seoul. Moreover, it appeared that their relative success was not simply in spite of their high densities but partly through them, including in the extent of testing and contact tracing, the capacity of public health infrastructure, investment in sanitation across the public realm and transit systems, significant state provision of face masks and the lingering collective memory of the 2003 SARS outbreak, which led to rapid changes in behavioural practices. It has also been suggested that in Hong Kong the 2019 protests against the Chinese state extradition bill, and the growing discontent of residents with the city's government, meant that the civic infrastructure was in place to facilitate rapid community response provisioning (Tufekci, 2020).

Studies emerged that questioned the perceived link between density and the pandemic. Writing about the Netherlands, Boterman (2020: 14) found no convincing evidence that density was a key factor in the spread of COVID-19: 'In fact, the Randstad conurbation, which is one of the most populous urban areas of Europe, has lower levels of SARS-CoV-2 related metrics than most other parts of the country.' His analysis, using public health statistics, suggests that hospitalisation and mortality due to COVID-19 are not clearly correlated with population density, or even for that matter with cities. In their work on COVID-19 in the USA, Hamidi et al. (2020) used structural equation modelling of spread and mortality, and county density data (though not domestic overcrowding), to show that while larger metropolitan areas experienced higher infection and mortality numbers, density itself was 'unrelated to the infection rate and negatively related to the mortality rate' (p. 2). This, they suggest, may be due to greater adherence to social distancing in denser areas – Gallup research suggested that residents in dense places are more likely to practise social distancing than those in less dense areas, and in other disease outbreaks outside the USA residents of denser places have been found to exhibit greater caution, including 'avoiding public gatherings, not making nonessential trips and avoiding public transit' (Hamidi et al., 2020: 11).

As the wider density pathology receded – without entirely disappearing – from political and public debate, a more textured geography emerged focused on the risks associated with particular spatial connections and conditions. For Hamidi et al., it was *connectivity* through commuting, tourism and trade, rather than density, that played a driving factor in initial infections. This emphasis on connectivity dovetails with other research linking infectious disease to the changing nature of urbanisation. Connolly et al. (2021) have argued that 'extended urbanisation', including peripheral urban developments, have increased vulnerabilities to the spread of infectious disease. Just as the COVID-19 pandemic was emerging, they noted that recent years have seen global disease outbreaks in rapidly urbanising China and Africa, including SARS and Ebola, which moved from urbanising hinterlands to cities including Hong Kong, Toronto, Freetown and Monrovia (and see Ali and Keil, 2008). They draw attention to the socio-material transformations taking place on urban edges, including zoonotic disease, in the 'expansion of urban settlements in previously forested or agricultural areas', adding that as with SARS in 2003, accelerated urbanisation and mobilities have been accompanied by 'more extensive zoonotic risks' (Connolly et al., 2021: 258). As Keil (2020: no page) suggests, novel disease such as COVID-19 can emerge through 'the tentacles of urban society', which increasingly 'reach to far flung mining camps, logging operations, agricultural regions and the like that make urban life possible elsewhere' (Keil et al., 2020).

In this process imaginary, particular *spatial conditions* have been identified as associated with infection spikes. Keil (2020: no page) points to 'care homes, prisons, camps, reserves, some work environments such as meatpacking plants and among migrant farm workers'. Connolly (2020: no page) has pointed out that while Singapore has been praised for its handling of COVID-19, there were spikes in recorded infections among the city's migrant worker population, including 'nine dormitories, housing more than 50,000 men, mostly from Bangladesh, India and China', located in peripheral Singapore and housing '12–20 workers sharing a single room.' Throughout the summer and autumn of 2020, the public debate in the UK focused on the high death toll in care homes, as well as in the practices of particular factories (e.g. amongst some garment factories in the lockdown of Leicester in June 2020). In the USA, the focus shifted from a density pathology imaginary in New York in spring to particular spaces in the southern states in the summer, including air-conditioned restaurants, cafes and bars transmitting the virus indoors (Powell, 2020). Crowded pubs and busy churches were linked to spikes in the UK and South Korea. Certain kinds of indoor spaces, even at low densities, emerged as riskier than denser outdoor spaces (Indorewala and Wagh, 2020).

The density debate evolved into a question of how to fashion a 'new normal' in the dense spaces of the city, particularly indoors: shops, bars, cafes, restaurants, galleries, museums, gyms and so on. New makeshift urban architectures emerged, including across store fronts or directing people in one-way flows, as well as changing regulations around face coverings, distancing and spatial carrying capacities. Attention turned to organising densities – in schools, workplaces and universities, for instance – into managed 'bubbles'. The density debate became more specific, pluralised and targeted, and – even as sanitation remained at the forefront – less beholden to the sanitation syndrome of pathological density. Attention turned to the thorny question of how to ensure indoor populations could be made 'Covid-safe', and here value morphed into a more specific debate centred on behaviour. Social and mainstream media were replete with images of teeming bars and restaurants, and moral judgements of 'irresponsible' young revellers and 'Covidiots'. However, alongside this, a parallel debate intensified connecting density and COVID-19 to *crowding* and *poverty*, and especially domestic density in lower-income housing.

The crowding imaginary

As the pandemic progressed, it became clear that lower-income groups were disproportionately impacted by the virus, although the key drivers – occupation (especially roles that cannot be undertaken from home), working conditions, pre-existing health conditions, the lack of social distancing opportunities in some deprived neighbourhoods, 'overcrowded' homes, etc. – remain unclear. In making their recommendations on priority groups for vaccination in December 2020, the UK's Joint Committee on

Vaccination and Immunisation stated that 'occupation, household size, deprivation, and [reduced] access to healthcare' can increase susceptibility and worsen infection outcomes, especially amongst Black, Asian and minority ethnic groups (JCVI, 2020: 6). While there is at the time of writing little evidence that density in the locality intensifies the impact of the virus, there is growing evidence that 'crowding' in lower-income households – a particular expression of density – plays a role alongside other factors.

In New York, the highest number of cases per capita emerged in areas with the lowest incomes and largest household size (*Outlook*, 2020; *The New York Times*, 2020 – reflecting data showing that the Bronx has 12.4% of the city's crowded households, compared with 5.4% in Manhattan; Bassett, 2020). In the UK, areas of Birmingham and London with cramped living conditions were shown to have significantly more cases of the virus. In Bastwell, Blackburn, where 86% of residents are from Black, Asian and minority ethnic groups, one in ten people had been infected by December 2020, 'four times higher than a neighbourhood five miles away where only 2% of people are non-white' (Halliday et al., 2020: no page). A study by the New Policy Institute found that 11% of homes in London and 9% in Birmingham are 'overcrowded', often multi-generational and lower-income, and located in areas with an estimated 70% more cases than the least dense areas of the country (New Policy Institute, 2020; Wall, 2020). The ten worst-hit council areas in England had 'densely packed Black, Asian and minority ethnic (BAME) communities' (Halliday et al., 2020: no page).

Church End, a small low-income neighbourhood in Brent, north London, with a large British-Somali population, had three times the average numbers of COVID-19 deaths for England and Wales (Mohdin, 2020). Many residents there are employed in roles that cannot be undertaken from home – 'carers, bus drivers, cleaners, postal workers, shopkeepers and taxi drivers' – and houses and apartments are often overcrowded (Mohdin, 2020: no page). When housing costs are factored in, one-third of Brent lives in poverty. Across the UK, the disproportionate impact of COVID-19 on BAME groups has been linked to a combination of poverty, overcrowded and poor-standard homes, and air pollution (Carrington, 2020). The Health Foundation (2020) argued that better housing is crucial for the unequal health impacts of COVID-19, findings that have been supported by reports from the Centre for Ageing Better (2020), *Inside Housing* (2020) and a Public Health England (2020) review that identified lower-income overcrowded housing as increasing the risk of transmission and death, especially for BAME groups.

Despite the growing evidence in support of the 'crowding imaginary', a degree of caution is needed here, for two reasons. First, the entangled economic and social relations between home, work, neighbourhood and wider city often make it difficult to separate out these different geographies. Residents in lower-income neighbourhoods are more likely to have jobs that cannot be done from home, the essential work that maintains and sustains the city: public transport, healthcare, refuse collection, deliveries, food service and supply, and so on. Burnham (2020), Mayor of Greater Manchester, argued that workers in low-paid insecure jobs were reluctant to quarantine at home if identified through test and trace for fear of losing their jobs, and called for the government to guarantee quarantining with full pay. Different urban densities – domestic, neighbourhood, transient, on the move, etc. – necessarily criss-cross, particularly as lockdowns are eased.

Second, in many poorer neighbourhoods globally, crowded homes and higher density neighbourhoods *co-exist* and depending on the organisation and socioeconomic conditions of the neighbourhood – for example, the potential to maintain distancing around shared lanes, public spaces, or water and sanitation infrastructures – this confluence may impact infection rates and numbers. In Dar es Salaam, in addition to overcrowded homes, in some places residents also share communal toilets with more than ten other people (Panman, 2020). In Mumbai, one resident spoke about how 'the lanes are so narrow that when we cross each other, we cannot do it without our shoulders rubbing against the other person … We all go outdoors to a common toilet and there are 20 families that live just near my small house … We practically all live together. If one of us falls sick, we all will' (Sur and Mistra, 2020: no page).

Indeed, a survey in July 2020 estimated that half of Mumbai's 'informal settlement' residents had been infected; the survey, linked sharing facilities such as toilets to the spread, and identified 'crowding' in and beyond the home as playing 'a key role in the spread of infection' (Biswas, 2020: no page). In Delhi, people living in 'informal' neighbourhoods have up to 50% greater contact with one another than residents in 'formal' areas (Weston, 2020). The Karachi Urban Lab (2020) estimates that 88% of housing stock in Karachi 'consist of plot sizes 120 square yards or less', compared with the top 2% of housing stock ranging between 400 and 2000 square yards. As Cox (2020) has argued, residents in poor, dense neighbourhoods are likely to have higher 'exposure density' – a term historically linked to radiology – than those in other areas, and however rich social infrastructures might be in dense, low-income neighbourhoods – from community groups, charities and informal support networks, to the loose socialities of local cafes and playgrounds – they cannot 'improvise out' those conditions (Latham and Layton, 2019). UN-Habitat (2020) have suggested that a confluence of domestic overcrowding, a lack of potential in many poorer neighbourhoods to isolate or work from home, or to access adequate water and soap to wash hands, combined with inadequate healthcare, operate together to facilitate transmission.

The debate on the relationship between density – whether in the home, in the neighbourhood and in the city at large – and COVID-19 will continue but what is clear is that the pandemic has let the density genie out of the bottle. Density is no longer only the concern and debate of urban researchers, policymakers and planners; instead, we are in a global moment of reflection on the merits and futures of dense living. The focus on the relations between household overcrowding, poverty, race and ethnicity brought a population – however visible it had previously been in urban research and policy – further into public view and attached a new urgency to the relations between density and inequality. When this urgency combined, in the summer of 2020, with the *Black Lives Matter* movement, an intense politics of value connecting density to race, ethnicity and poverty was thrown front and centre into public debates.

These inequalities are not new, of course – as critical urbanists have long shown, they are woven into the very constitution of urban production and social reproduction (Castells, 1977; Harvey, 2009 [1973]) – but they have been intensified and made more publicly apparent through the pandemic. In places that urbanist Pitter (2020) has referred to as 'forgotten densities', where dense populations are found alongside high levels of health, class, race, gender and socioeconomic inequality, a new approach is needed. The crisis has provoked a wide-ranging conversation about different kinds of city densities and their futures, including around how to ensure greater attention, investment and care towards areas where inhabitants have been badly affected by the virus even as they provide essential labour for the rest of the city. COVID-19 could be a moment to provoke a new politics of value through which densities become liveable and enjoyable for the majority in cities, and not just the few. That, though, is an enormous and profoundly politicised challenge, demanding urgent rethinking of how we plan, design, build and come to know cities.

Revaluing density

At the centre of this wide-ranging debate is the question of whether the response to the impact of COVID-19 on cities should be *reformist* or *transformational*. The reformist agenda revolves around catalysing and responding to the cumulative effect of a range of new habits, routines and structures, and to three shifts in particular. First, a changing set of domestic and neighbourhood practices, from greater working from home, particularly for middle-class workers, to people spending more time in their neighbourhoods, which has generated considerable debate about cycle lanes, walking spaces, investment in local parks and other open spaces, including calls – as one piece in *The Scotsman* noted – for more 'garden cities' (Hague, 2020).

The second relates to travel. Greater nervousness around both public transit – with people opting, if they can, for cars – and crowds in busy public spaces, alongside people doing more online shopping, means street-level retail and public transit systems may reduce. If universities and colleges see fewer students on campus and in city-centre accommodation, that, combined with less tourism, could further impact city economies. Third, these factors could pool to reduce high rents and housing costs in many city centres, and concomitantly to drive up housing costs outside of central areas. It may become cheaper to build affordable homes in central areas, and while the picture is highly varied globally, we are starting to see new patterns of de-densifying city centres and densifying peripheral locations. Together, these three sets of factors could combine, with significant implications for where and how we live in and beyond the city, in the process sifting and sorting densities, and may intensify geographical trends to urban sprawl (Angel et al., 2018; Kotkin, 2013). They suggest possible changes in how density is valued by different groups, and potentially entail new topographical and topological renderings of urban population.

The reformist agenda seeks to work with these emerging trends. For example, a leader article in *The Economist* (2020) on cities 'after the pandemic' located the urban agenda in cycle lanes, walking paths, good mayors and attracting younger people to city centres. Despite some of its merits, the reformist agenda will not produce the kinds of policy shifts and economic investment required to reduce the sharp urban inequalities that have been deepened by the pandemic, whether in relation to income, housing conditions, or race and ethnicity. These conditions demand an expansive and long-term perspective. Moreover, while Kotkin (2020: no page) argues that an answer to the pandemic should be to allow more growth in urban peripheries – through 'substantial changes in land use and zoning regulations; encouraging remote work where possible; and developing personal, eventually autonomous transport systems instead of forcing people into crowded subways' – it is unlikely that more than only small minorities of people will leave behind higher-density living and its social, economic, political and environmental possibilities.

The urban transformation needed to revalue density has to be far-reaching and substantial. The inequalities and vulnerabilities revealed by COVID-19 are not born of the pandemic but lie with longer histories. As Madden (2020: no page) has argued, 'cities do need to radically change – but not in the ways being promoted either by density sceptics or professional urbanists'. Instead, he argues, urban transformation must pursue cities that are 'more egalitarian, more democratic, and more capable of meeting actual human needs', including through investment in municipal services, housing, health, decarbonised public transport and racial equality. This demands going beyond narrow valuations of density and densifications as urban social, economic and ecological goods, towards a deeper probing of the relations between value and population in the making and politics of density. Below, I highlight three inter-related domains though which a transformational revaluing of density might proceed: *governance*, *form* and *knowledge*.

Renewed urban governance

The past few decades have seen many municipal budgets reduced, limiting the capacity of public agencies to plan for and respond to health crises. Local states often lack the financial resources, time and capacity to work with and support neighbourhoods and households, particularly in rapidly growing urban areas. They must be equipped to deliver ambitious integrative approaches that connect housing, infrastructure and services to tackle poverty, inequality and climate as interconnected challenges. Indeed, robust and well-resourced local and regional governments have had relative success with managing COVID-19. In Kerala, years of investment have led to stronger public health infrastructure and expanded numbers of medical staff – especially doctors and nurses – and community resources for sanitation and hygiene, when compared with many other Indian states. This served the state well with both the Nipah virus and COVID-19 (Vijayan, 2020).

The pandemic has reinvigorated long-standing agendas for a new municipalism. As Zárate (2020: no page) has pointed out, social movements, communities and activists 'have been building practices and narratives' for this agenda for decades, including through the World Social Forums and the 2005 *World Charter for the Right to the City*. The New Municipalist movement advocates 'concrete possibilities for recasting the local state, away from technocratic and corporatist mantras', focused on homes, social economies, local democracy and the feminisation of politics (Zárate 2020). This work is underway in cities as different as Barcelona, Preston, Rojava, Jackson and Cleveland, shaped in part by histories of municipal socialism and international municipalism (Thompson, 2021; and see Barcelona en Comú et al., 2019).

The challenge for governance lies not only in supporting poorer densities but in preventing exclusive high densities that price out the majority. In Berlin, which in 2018 had one of the fastest-growing property and rental markets in Europe, the five-year freeze on increasingly expensive rents is one example of halting patterns of densification that tend towards exclusion. Municipalities, including Berlin and Barcelona, have also sought to limit the impact of companies such as AirBnB on rising rent and housing costs. If these decisions emerge from the municipality, other changes to urban investment necessarily demand action from the national or federal state. In their case for a Green New Deal, Aronoff et al. (2019) argue that redistribution – including higher taxes on wealth, inheritance and upper-income earners – will be necessary to fund public interventions and set fiscal rules and mechanisms for investment in better housing, infrastructure and services.

As COVID-19 has exposed, revaluing density demands governance attention to differences in class, race and ethnicity. The combination of the pandemic and the wave of *Black Lives Matter* protests following the death of George Floyd has made this revaluing more urgent still. For Vancouver city planner Yasin (2020), racism has been built into 'renewal' and 'liveability' densification programmes, including through the construction of highways through Black neighbourhoods, particular strategies of crime prevention and surveillance, direct and indirect displacement and the unequal provision of services and healthcare. She identifies several necessary shifts, including investing in health services, housing, youth development, equitable transportation, neighbourhood care and abolishing 'communicide' planning (Morris, 2019), which disperses and displaces – often in the name of urban renewal – tending towards racialised densities.

Finally, an important part of the challenge of urban governance in revaluing density relates to changing patterns of urbanisation, and in particular to forms of peripheralisation that exceed the confines of administrative jurisdiction (Connolly et al., 2021; United Nations, 2018). These conditions demand not just city planning but forms of coordinated planning between cities, regions and central states, and especially so in places in which rapid population change is occurring across urban regions, demanding integration, regulation and investment from the central state (e.g. see Pike et al., 2018, on the demise of regional economic development agencies in the UK).

The politics of form

Too often, architecture, design, density and inequality go together. In the USA, almost half of lower-income Black children live in neighbourhoods with concentrated poverty (Austin, 2013). Lee (2020) has argued that progressive architecture cannot be isolated from policy and culture in the USA, and sets out a series of proposals, including a shift from architects working for private capital interests towards a stronger commitment to the public good; investing time and resource in Black neighbourhoods and public spaces; building genuinely affordable housing; meaningfully incorporating diverse local voices in projects; supporting investments in disadvantaged neighbourhoods and groups; and a shift in design training to reflect these injustices and ways of transforming them.

As the connection between overcrowding and COVID-19 shows, tackling housing poverty is especially vital here. Density is not an 'urban good' if children living in dense high-rise housing, as Richardson (2020: no page) argues, look from their windows 'on to private, gated outdoor play areas', or when housing provisions and markets become so distorted that they cease to be 'affordable.' In the UK, the rental market has doubled in the past 30 years while social housing has diminished, an estimated 80% of the market is unaffordable for many, while in the past decade there has been a 141% increase in the numbers forced to sleep in the streets (Richardson, 2020). As the Centre for Ageing Better (2020) has argued, improvements to the housing stock must be accompanied by enhanced security of tenure, and the forms of investment and financial support available to different kinds of tenure. In *Place and Identity*, Richardson (2018) argues that a 'home' requires six provisions: security, safety, quality, privacy, connectedness and affordability. It is not enough to hope that social housing can be delivered at scale through cross-funding from residential and commercial development. The housing crisis demands radical action on the scale of post-war housing construction, and a densification not of luxury apartments but of well-designed homes and surrounds.

Following on, a vital part of a politics of urban form for better densities lies with practices of *augmentation*. Here, as in other urban realms, there is much to learn from activists and residents. In Mumbai, the small urban group URBZ has a rich history of promoting ways of augmenting existing forms of density in poor neighbourhoods (see urbz.net). As URBZ have shown, rather than argue that residents would benefit from densities being either increased or reduced in order to meet certain social, economic and environmental goals – usually externally defined by policymakers and officials – it is often more productive to identify and work with the multiple concerns that different residents themselves attach to dense living.

Finally, a revaluing of density through form demands a new focus on infrastructure provisioning, maintenance and repair and especially on water and sanitation. Sanitation systems have always been vital to healthy urban lives, and the pandemic has underscored their role in neighbourhoods where they fall short. Diseases such as cholera, tuberculosis, schistosomiasis, trachoma and helminthiasis are all more prevalent in dense and poor areas (Neiderud, 2015). Ebola spurred investment in sanitation in poorer dense urban spaces in Africa, albeit in a patchwork way (Mis, 2014; Nyamalon, 2015) – if COVID-19 is to catalyse radical change, then what is needed is not another density pathology and sanitation syndrome, but a refocusing on infrastructure for urban life as integral to the politics of form (McFarlane, 2019).

Knowledge politics

Finally, revaluing density in the city demands attention to *knowledge politics*. The arguments for densification over the past two decades are inescapably forms of knowledge politics, too often leading to unequal sociospatial consequences (McFarlane, 2016; Merrifield, 2014; Peck, 2015; Perez, 2020). As Roy (2017) has shown in her work in Los Angeles and Chicago on the demolition of public housing, tenant eviction and the foreclosure of homes (which sometimes end up remaining empty), de-/re-densification in the USA is a process not just of gentrification but of 'racial banishment.' However, there is a long history of urban activism that entails an alternative set of knowledges of density, and which takes that into negotiation and contestation with the state.

Groups such as the Chicago Anti-Eviction Campaign and the LA Community Action Network, which Roy (2017) examines, pursue an urban knowledge that critiques displacement, banishment and racial power, seeks community empowerment, voice and rights, and points to a different politics of density. We see this, too, in groups such as the Austin Justice Coalition (2020), who critique forms of densification that have led to classed and racialised displacement, seek to learn about housing and land regulations and codes, and develop alternative community proposals. Or, there are groups such as Slum/Shack Dwellers International or the Asian Coalition for Housing Rights, who form maps, charts and categories of density in poor neighbourhoods, including of housing, infrastructure and services (Satterthwaite and Mitlin, 2014) – and who have been active in supporting lower-income dense neighbourhoods throughout the COVID-19 pandemic. These different groups represent distinct political approaches and attach their own values to density – some insist that density needs to be known in relation to experiences of race and space, others that the knowledge of the urban poor must be centrally and genuinely integrated into urban planning – and some are more transformatory than others, but together they provide clues to an alternative set of knowledges, conceptions, policies and values for density.

In neighbourhoods hard hit by the virus or its socioeconomic consequences, an alternative archive of density can be drawn into a new politics of urban value, bringing the voices of 'forgotten densities' (Pitter, 2020) into governance and form. Tools such as participatory budgeting (PB) remain useful here. When done well and with genuine trust and dialogue, PB can help set priorities that lead to meaningful change. In its Brazilian origins, PB fostered a democratic and dialogic flourishing in Porto Alegre, and the redistribution to poor and dense neighbourhoods to support infrastructure and services. Writing about the PB work of the Scottish Community Development Centre (SCDC), Reilly (2020) argues that with the pandemic the urgency to support community voice in the distribution of city resources has grown and is a test of citizenship, demanding 'deep deliberation, evaluation and learning.'

Conclusion

The COVID-19 pandemic has prompted a new and wide-ranging public debate about urban density, including density in the home, neighbourhood and wider city, provoking a dramatic and rapidly changing context from which to think, plan for and manage urban densities. While for some people densities induce anxiety and are to be avoided, others insist that densities are and should be 'reshuffled' through new patterns and geographies of working and living across regions (e.g. by de-densifying centres and densifying smaller towns, rural areas or lower-density urban edges), and others still argue that the inequalities exposed by the pandemic – made more urgent still by movements such as *Black Lives Matter* – demand a redistribution towards 'forgotten densities' and greater limits on socioeconomically exclusive densifications. Across each of these positions and others, 'value' and 'population' are being reconstituted, forming a dynamic field that has on the one hand always accompanied urban thought, policy and planning, but which on the other hand has reached a point of public intensification, debate and possibility.

Critical urbanists have a role to play in shaping the debate in the short and medium term, and in generating a new politics of value in different city contexts. I have suggested three inter-connected domains as especially important – governance, form and knowledge – which offer an opening to building the transformation that, as the impact of the pandemic has demonstrated, is needed. Revaluing density is a multi-scalar and multi-sectoral challenge. Realising this agenda demands a range of shifts, from changes to housing and infrastructure policies and resourcing, regulatory changes on urban development, and commitments to techniques such as participatory budgeting, to alliance-building between residents, activists and governance structures that politicise how density is understood and pursued, and forms of integrated urban management between cities, regions and central states. The built environment is, to be sure, slow to change. There is inertia, push-back from vested interests, inherited practices and habits, and change is sometimes hamstrung by economic restrictions or policy contention. But, however ambitious this agenda is, the pandemic has created a moment of reflection and experimentation, as well as one of deep politicisation of the urban condition, and density has been central to that. If there are times to realise progressive change on this scale, this is surely one of them.

I will close by highlighting two final implications for research on urban density. First, focusing on the mutually constituting relationship between concepts of value and population offers a route to understanding the nature, inequalities and politics of density, and this obviously applies not just to the pandemic but to density debates around other contexts and issues too. This is population, not just abstract demographic unit but as differential forms, geographies and temporalities of density, forming a dynamic relationship to a politics of value. Second, and following on, I have shown that a focus on how the relationship between density and geography changes in political and public imaginations can open new directions for understanding and managing density. If *material* density geographies went through significant transformations in the pandemic, *imaginative* geographies of density and risk have also been remade, from density-as-pathology 'out there' to more textured process geographies and crowding imaginaries. These shifting geographies carry political histories connected to density, and examining their pasts, presents and potential futures is an important part of understanding and repopulating density as a central idea in urban studies.

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