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The Indexification of Poverty: The Covert Politics of Small-Area Indices

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Abstract: In recent decades statistical indices have become a dominant method for measuring many features of the social world. While the resulting enumerations are regularly cited by critical human geographers, the wider political stakes of indexing the world remain unaddressed. In this article, we theorise *indexification* as the process through which composite statistics transform theoretical constructs into epistemic objects, and then geographically bounded rankings. Rather than a neutral process, we argue that these epistemological manoeuvres can mask various forms of violence. Through a detailed analysis of the UK's Index of Multiple Deprivation (IMD), we highlight the clandestine politics of indexification and their tendency to conceal harms meted out by the state. Seeking a more critical reckoning with indices, we conclude by calling for and outlining a project of *radical indexification*—a participatory, democratic, and transparent endeavour that takes spatial justice as its organising principle.

Keywords: epistemology, index, deprivation, poverty, the state, statistics

Introduction

In October 2018, a photograph was posted on the Facebook page of Dr Nick Stella, a Republican congressional candidate in Illinois. Captioned "Only you can stop this from becoming reality!", the image depicts a desolate scene. A pitted dirt track runs between rows of grubby pebbledash houses; in the background, a billboard reading "Congratulations Madam Speaker Nancy Pelosi" has been photoshopped against the featureless grey sky. Yet the photo is not of a town in Illinois, or even in the USA. This is a photograph of Jaywick Sands, a settlement on the coast of Essex in the east of England and, according to the UK government's Index of Multiple Deprivation (IMD), the most deprived place in the whole country. How does an image of Jaywick become a visual stand-in for peri-urban devastation in a future Illinois? Through its indexed status, Jaywick has taken on an outsized role in a wider representational economy of poverty (Strong 2022). With each new publication of the index, photographers and film crews descend on the most deprived areas to capture their destitution (Sykes 2015). These media accounts reproduce stereotyped depictions of feckless welfare claimants (Jensen and Tyler 2015), contributing to territorial stigmatisation. An image from one of

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these expeditions was likely thrown up by a Google search for "run-down town", leading to its inclusion in the Stella ad (Smith 2018). And these negative depictions have proved harmful for people who live in Jaywick. As one local resident, Danell Dreelan, put it: "We are not down and outs, we are normal people with normal lives—our kids go to school. Even the dustmen call us scumbags" (Harvey and Cambridge 2019).

This example reveals the political stakes of *indexification*: the process through which composite statistics transform theoretical constructs into epistemic objects, and then geographically bounded rankings. The comparative function of indices such as the IMD focuses attention on the most extreme cases. Their bounded geographies emphasise proximate at the expense of distal relations, obscuring the co-constitution of places (Massey 1994). Instead, they play localities off against each other, implying that each is responsible for its own fate (Amin 2005). Closely linked to state enumerations, they can deprive communities of control over how they are represented and understood (Scott 1998). In turn, this can conceal the violence deployed by state apparatuses in their attempts to govern.

In this paper, we develop a constructive critique of indexification, which aims to challenge these harmful aspects. There are two sides to our argument. First, we situate indexification as a specific mode of "poverty knowledge" production (O'Connor 2009), one of many state attempts to govern through technical, standardised cartographies that aim to make territory and populations *legible* (Scott 1998). We adopt a relational perspective in which the state is "an ensemble of power centres and capacities that offer unequal chances to different forces within and outside" its apparatus (Jessop 2016:56).[1] Specifically, we argue that indexification forms part of a broader "governmentalization" of the state (Foucault 2007:109) in which the governing practices through which states manage territories and populations are modelled increasingly on market competition (Dardot and Laval 2013). By examining indexification as an epistemological, political, and geographical process, we hope to encourage further reflection among critical geographers on how indices such as the IMD should best be deployed in our work. We say "our work" because this paper is, in part, a *mea culpa*. In the disciplinary sub-field in which we both work, which examines the quotidian effects of austere state retrenchment, projects and field sites are regularly justified in terms of high IMD rankings (e.g. Horton 2016; McDowell and Bonner-Thompson 2020; Raynor 2021). As authors, both of us have also framed our research in this way. EK selected field sites for their PhD based on the IMD, while SS's publications emphasise that his fieldwork was conducted in a region calculated by the IMD to be the most deprived in the UK (e.g. Strong 2020). The same uncritical citing of the IMD can also be found regularly within the papers of *Antipode*, as the foremost journal of critical geography (e.g. Bennett 2011; Bickerstaff and Agyeman 2009; Wallace 2015). We believe that critical geographers—ourselves included—must be more conscious of the logics which are folded into our work when we follow an index.

However, our call for critical reflection on the construction of indices is resolutely not a call for their abandonment. We are in agreement with radical statisticians who argue that quantitative methods can marry with critical theories to become "the weapon of the otherwise unheard, unseen, ignored" (Dorling 2019:

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xvi). Consequently, the second element of our argument aims to "avoid the disempowering paralysis that sets in after we challenge official statistics without pursuing emancipatory alternatives" (Wyly 2009:317). Throughout this paper, we identify three specific issues with indices, which can be seen in the example of Jaywick: their lack of relationality; the loss of community control over their representations; and their tendency to conceal state violence. We then offer a vision of a *radical indexification* that would challenge these issues, and therefore better serve an emancipatory critical geography. We take this step in full awareness that the comparative function of indices tends to promote the governmentalisation of the state. Nonetheless, in line with previous calls for a "critical, strategic positivism" (Wyly 2009:312), we argue that the power of enumerations should be harnessed. Indexification should be used to serve the aims of a radical geography, in full awareness of its limitations (Plummer and Sheppard 2001). Therefore, rather than naively positioning all quantitative approaches as conservative and acritical (Schwanen and Kwan 2009; Sheppard 2014), we call for critical geographers to use indices "not only to describe the world but to change it" (Gordon and Macfarlane 2000:ix). It is our hope that radical engagement with indices—as a longstanding if relatively straightforward method of data distillation—might raise broader questions for critical quantitative scholarship, in an age of proliferating data and increasing complexity.

To consider how indexification might form part of an emancipatory critical geography, this paper proceeds in three parts. We begin by examining the empirical reach and theoretical implications of indexification as a specific statistical technique. We reflect on the broader epistemological landscape that this technique inaugurates and highlight what is concealed as much as revealed through its deployment. We then bring this theorisation to bear on the specific example of the IMD, offering a critical geographical reading that foregrounds the Index's relationship to governmentalisation and state violence. This approach is novel since past critiques of the IMD have tended to discuss how its statistical methodology could be optimised (e.g. Connolly and Chisholm 1999; Deas et al. 2003; Simpson 1995); in contrast we engage with statistics not as a discipline "but as a set of historical and material technical practices" (Prince 2020:1050)—and signal indexification as a novel moment within a wider history of quantification (Berman and Hirschman 2018). The paper culminates in a call for a project of *radical indexification* that could address fundamental issues of spatial injustice. Drawing on diverse critical projects including radical statistics, Black feminist, and Indigenous data science, we offer a set of practical approaches through which indices might engage with the relational injustices of the social worlds they seek to capture; offer democratic alternatives to the epistemic violence of imposed indicators; and work from below, against hegemonic state projects. Our overall aim is to build an intervention which resists the dominant logics of indexification.

Indexification in/as Practice

Nowadays, it seems as though all the world is indexed. Recent decades have seen indexification tied to the naming and governance of an ever-increasing number

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of national and global phenomena (Stiglitz et al. 2009). Interested parties can distinguish between countries on the basis of comparators from press freedom (Reporters Without Borders 2021) and gender equality (UNDP 2020) to sustainable happiness (Happy Planet Index 2021) and global love (World Love Index 2020). Perhaps the most famous example of this process is the Human Development Index (HDI), inaugurated in 1990, which sought to expand development measurements beyond GDP and hence capture a broader spectrum of human flourishing (Stanton 2007). However, despite the proliferation of indices, the process of indexification has so far received little attention from critical geographers (although see Fu et al. 2015a, 2015b).

The novelty of indexification lies in its statistical operations. Where most statistical models estimate an output variable based on the value of one or more input variables (James et al. 2013), indices attempt to mathematically describe a concept for which no extant proxy variable is available. Rather than predicting one variable based on correlations with others, indices "serve to summarize a complex phenomenon by aggregating multiple indicators" (Hawken and Munck 2013:802). The logical coherence of a statistical model lies in the mathematical relationship between different variables; the coherence of an index follows from its correspondence with the theorisation of the phenomenon which it attempts to measure. While statistical models also rest on the (contestable) assumptions, theories, and decisions of those who build them (Silvast et al. 2020), in many cases the coherence—or even the very existence—of the very phenomena which indices claim to measure can be called into question (Fu et al. 2015b). Ravallion (2012:2) refers to these as "mashup" indices, to capture their mixing together of multiple data sources based on the creator's discretion. Through this process, indexification brings diverse abstractions into being as epistemic objects; concurrently, by projecting them cartographically, it produces space in the form of a logical totality (Prince 2020). We suggest there are four vital moments in this process of translation.

First, indicators must be *selected* based on the theorisation of the phenomenon being measured (Allik et al. 2020). As this phenomenon cannot be captured directly, there may be little theoretical justification for the choice of indicators, with this being determined more by data availability (Ravallion 2012). Second, each indicator must be *weighted* according to its relative importance (Allik et al. 2020). Through weighting, a concept is given numerical shape and heft. While indicators can be combined without weights, this is still *de facto* a weighting, as it assumes that all indicators are of equal importance. Applying a weight therefore explicates the assumptions that are being made (Decancq and Lugo 2013). Weighting an index is ultimately political (Deas et al. 2003), as it makes a normative claim about the relative significance of a particular indicator (Decancq and Lugo 2013). As a result, weights can be created based on expert opinions, policy analysis, and survey data (Allik et al. 2020), although often this process is arbitrary (Ravallion 2012). The normative assumptions intrinsic to this process are only rarely recognised and are likely to be out of step with the radicalism which guides a critical geography.

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Third, an index must be *validated*. Where statistical models are validated based on their predictive validity, this is problematic in the case of indices (Ivanova et al. 1999). An index can be tested for its correlation with other similar indices, or with proxy variables such as health in the case of deprivation (Allik et al. 2020). The construct validity of an index can also be tested, for instance by checking correlations between the different indicators (Ivanova et al. 1999) and ensuring that these converge or diverge in line with theoretical assumptions (Campbell and Fiske 1959). Yet all of these are circular modes of validation: an index is a good measure of a posited object when it conforms with other posited measures of the object. In this way an index brings an object into being in the process of measuring it.

Fourth, an index involves cartographic projection of the world as *ranked* space. As with all cartography, this projection is not a neutral reflection but a constitution of geographical realities (Del Casino and Hanna 2000). The purpose of indices is to create alignment across multiple contexts, allowing comparison across divergence. Yet we should be wary of the flattening of geographical difference involved in this process. The forms of knowledge production which give rise to rankings are bound up in existing projects of governance and regulation which operate in accordance with prevailing modes of power (Kearns and Reid-Henry 2009). By producing a measure of a particular object and then fixing it in space, that place can then be justifiably targeted for correction. As in the example of Jaywick, this can be experienced as territorial stigmatisation and loss of agency.

A Critical Geography of Indexification

Considering indices as heuristic or numerical devices alone does not account for the geographical questions they raise, and the political works they enact. As well as producing an epistemological "object", indexification also establishes a set of "enumerative rationalities" that constitute strategies of power (Kalpagam 2014:8), central to what Foucault (2007:109) termed "the governmentalization of the state". Accordingly, state power is reconstituted around "a quite particular relationship of power and knowledge, of government and science" informed centrally by neoclassical economics (Foucault 2007:351)—where market logics, competition, and value accumulation have become foundational rationalities of governance (Dardot and Laval 2013). Both aspects of indexification—as epistemological object and enumerative rationality—make a distinct contribution to this process.

First, indexification *transforms theoretical constructs into epistemic objects*. This becomes problematic if, as is frequently the case, the process of producing an index reifies the role of the technical expert (Berman and Hirschman 2018). This in turn can render the world through a set of technocratic geographies. Through this "conquest of illegibility" (Scott 2010) the world is made countable and calculable. This renders the body politic as a source of potential wealth to be fostered and maximised through projects of state governance (Foucault 2007). Despite being wrapped in a positivist veil of dispassionate objectivity, indices reflect and produce "value judgements about the phenomena being measured and, more

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broadly, about what it means to know" (Conley 2018:1), while disregarding the people who comprise the phenomenon (Fu et al. 2015b). The production of these "official" knowledges enacts the authority of the state, through street-level bureaucratic practices such as censuses (Gupta 2012), but also through the cartographic fixing of contestable boundaries and socio-spatial formations in official publications (Prince 2020). These processes of quantification organise space as a site for value extraction, subjugating local practices which are rooted in experience and vernacular (Li 2007).

Second, indexification *turns epistemic objects into geographically bounded rankings*. Through its border-making function, indexification invokes a set of geographical logics that produce what Lefebvre (1991:24) defines as "abstract space". Posing space as grid-like, this produces a set of topological relations and cartographic imaginaries, of a world neatly divided and separated into distinct segments (Prince 2020). These imaginaries organise space-time in accordance with capitalist logics—of patterns, routines, and order. Rankings tend to overstate divergence and downplay similarities between places (Høyland et al. 2012). They thereby offer grounds for competition between areas, and hence reorganise the "economy of government" around market principles (Dardot and Laval 2013). And as an attempt "to stabilize the meaning of particular envelopes of space-time" (Massey 1994:5), not only do the boundaries of indices cut arbitrarily across roads, neighbourhoods, communities, commutes, routines, and lifeworlds (Massey 2005), these "spatially circumscribed" (Amin 2005:618) geographies suggest that localities are responsible for the conditions within them. This serves to draw attention away from the unequal distributions of power and capital over wider scales which are productive of localities (Massey 1994). By incentivising competition and localising responsibility, indexification constitutes a "state intervention with the essential function of ensuring the security of the natural phenomena of economic processes" (Foucault 2007:353).

To advance our critical geography of indexification further, we now develop a case study of a particularly significant example, the Index of Multiple Deprivation referenced in the introduction. In keeping with our relational framing of the state, we wish to highlight the contingency of the IMD's formation, and its embedding in multiple institutions and practices of the state. Consequently, the following section historicises its usage, before turning to the varied processes of state-making that are closely bound to indexification.

A Critique of the Index of Multiple Deprivation

Through the IMD, indexification has established itself as *the* standard—and indeed official—epistemic technique for measuring deprivation and mapping inequality in the UK today. But its rise to state-sanctioned dominance was unexpected given its origins outside the machinery of government. The emergence of the IMD is a case study that reveals both the radical potential of counting inequality, and the danger of counting when allied with particular forms of state power. The index proceeds from the influential theories of Peter Townsend (1979; see also Noble et al. 2004). Recognising that "poverty is a dynamic, not a

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static concept" (Townsend 1962:219), he makes two main arguments. First, poverty must be understood as *relative* to the type of society in which it resides: it exists in the context of the different forms of work, cultural values, social norms, and economic distributions of a given place (Gordon 2003; Townsend 1985). For Townsend and his followers, poverty is more than simply a threshold of (low) income; rather, it describes a deprivation of the resources, material and social, that are necessary to achieve an acceptable standard of living and to experience inclusion (Townsend 1987:127; see also Levitas 1998). Townsend's "poverty line" is therefore determined by a country's living standards (Dunn 2023). Second, poverty can be defined and measured on a *scientific* basis. Townsend seeks a set of observable, measurable, comparable, and testable criteria through which deprivation can be calculated over time and space—based on the idea that there are distinct dimensions of deprivation that can be recognised and measured separately (Gordon 2006).

For Townsend, then, deprivation is defined as "a state of observable and demonstrable disadvantage relative to the local community or the wider society or nation to which an individual, family or group belongs" (Townsend 1979:125). It is not our aim to develop an extended critique of this definition, as others have done (see Dunn 2023; Fu et al. 2015a; Sen 1983). Nor do we argue that Townsend's theory of poverty lacks radical potential—its commitment to understanding poverty as geographically variable and contextually specific is vital. Instead, our concern is with the spatial politics which follow from this definition as a result of its *indexification* within the IMD and the appropriation of a radical project by the state. We begin by sketching the history of the IMD, before critiquing its production of *deprivation as an epistemic object*, and subsequently of *deprivation as a geographically bounded ranking*. Our argument is that the IMD, as a specific articulation of indexification deployed by the British state, works to obscure the contribution of state institutions to the forms of deprivation which it tabulates: the state not only *defines but also produces deprivation* through spatially uneven policies and practices.

The Index of Multiple Deprivation: A Brief History

Indices to measure forms of deprivation have been a feature of UK government policy since at least the mid-1960s, with particular constructs focussing on policy areas including education and health (Noble et al. 2006). The 1980 Black Report drew government attention to health inequalities by demonstrating a close association between health and social class (Thunhurst 1988) and subsequent studies drew attention to geographical variations in both health outcomes and services (Jarman 1983). Using data from the 1981 Census, the Inner Cities Directorate of the Department of the Environment (DoE) analysed deprivation in urban areas using a composite of eight measures, to better target expenditure (Noble et al. 2006). This work was complemented by academic efforts to categorise small geographic areas across the UK on the basis of deprivation measures (e.g. Carstairs and Morris 1991; Jarman 1983; Townsend et al. 1988).

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With a quantitative relation between geographical areas and deprivation levels now established, the foundations for the IMD were laid with the creation of the Index of Local Conditions (ILC). Commissioned by the DoE from the Department of Geography at the University of Manchester (Simpson 1995), the ILC was constructed at the ward level using data from the 1991 Census (Connolly and Chisholm 1999), with 13 indicators including unemployed adults, low GCSE attainment, and quantities of derelict land. The ILC was originally intended to better target urban development monies, but it was soon being used for a wide range of statistical and evaluative purposes (Simpson 1995). In 1998, the Index was renamed as the Index of Local Deprivation and recalculated with minor methodological tweaks (Department of Health 2002).

The launch of the first Index of Multiple Deprivation followed in 2000. This included 31 indicators arrayed into six domains (including employment, education, and health) and was more fine-grained, with data available at a smaller level of geographical resolution compared to previous iterations (Deas et al. 2003). By 2002, under New Labour, responsibility for the Index had been transferred to the powerful Office of the Deputy Prime Minister (Deas et al. 2003) and the IMD was updated in 2004, with the addition of a new domain (Crime) and a geographical switch from wards to lower super-output areas which were smaller on average, with more standardised population numbers (McLennan et al. 2019). The stated intent had expanded beyond the targeting of development funding; now the domains were to support a national strategy of "Neighbourhood Renewal", which aimed to "narrow … the gap between deprived neighbourhoods and the rest of the country" (Noble et al. 2004:3).

These transformations in the IMD took place in the context of New Labour's "Third Way governmentality", which emphasised "local community empowerment as the driver of … economic regeneration" (Amin 2005:617). The IMD represents a particular historical entanglement of statistics and state power (van Meeteren 2019), accompanying policies and ideologies that emphasised local responsibility for social and economic problems, with an idealised and cohesive vision of community posited as the solution (Wallace 2010). This was a "new social morality, accompanied by a new science of measures and metrics" (Amin 2005:620) which offered ever more granular understandings of the localised distribution of social pathology. Law and order was a central pillar of New Labour's regime, with a particular focus on low-level "anti-social behaviour" (Squires 2006), and the inclusion of the Crime domain should be seen against this ideological backdrop.

Official statistics under New Labour were challenged by contemporary critics concerned by their lack of independence from ministers and low levels of public trust (Radical Statistics Group 1998; Thomas 2004, 2007). The government preferred to measure and discuss "social inclusion", a nebulous and therefore manipulable concept, to "avoid confronting the growth of poverty and income inequality" (Levitas 1999). On this count, the IMD represented a more robust attempt to measure poverty, building on prior theories and in collaboration with academics at the Universities of Manchester and Oxford; that this took place amid a flurry of ill-defined policy proposals about "social inclusion" demonstrates the

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futility of describing the state as an internally coherent entity (Jessop 2016). Nonetheless, despite the involvement of nominally independent academics, the development of the IMD cannot be divorced from New Labour's governmentality. The indices were developed in direct consultation with central and local government agencies, alongside voluntary organisations and academics (Noble et al. 2004)—but notably, not including members of those communities which would find themselves labelled as deprived. Therefore, what began as a radical critique of the state's failure to address poverty and inequality, and then developed into a quasi-state project—funded by the government, carried out by academics, in discussion with state and third-sector actors—was subsequently taken up by state institutions as a governmental technology. This complex of relationships has continued to determine the IMD: subsequent updates in 2007, 2010, 2015, and 2019 have seen methods, geographies, and indicators remain largely unchanged (McLennan et al. 2019). The seven domains of the 2019 IMD include 39 indicators (see Table 1), with the ambition for the Index updated to emphasise "[l]ocal policy makers and communities ... ensur[ing] that their activities prioritise the areas with greatest need for services" (Noble et al. 2019:5). It is therefore crucial to ask how these origins affect the utility of the IMD for a critical geography, and the extent to which the IMD can be divorced from the operations of state power, in order to challenge them. We turn to these questions in the following sections.

The IMD as an Epistemic Object

Since it cannot be measured directly, the IMD constructs a particular conceptualisation of deprivation. In part because indexification relies on the enumerations of state institutions, it is our contention that the Index obscures the contribution of state agencies to deprivation on the ground. It conceals this role through the differential inclusion and exclusion of certain populations within its indicators. Counts of population "have become intrinsic to the formulation and justification of governmental programmes" (Rose 1991:674). These are not neutral acts of counting: the question of which people and places are to be included in these counts is simultaneously a decision about the boundaries of citizenship, membership of a political body, and the parameters of subsequent provisioning. Consequently, the epistemological decisions taken in the construction of the IMD reflect wider rationales which delimit citizenship and rights and determine the unequal governance of impoverished populations. Within the IMD, decisions over "who counts" lead to some exercises of state power being disregarded as sources of deprivation. Others are folded into a nominally "private" sphere of economic exchange; others still are ignored entirely. This continues a longstanding tendency of official statistics working to avoid politically embarrassing findings (Radical Statistics Group 1998). Consequently, the IMD implicitly frames the state as ameliorating, rather than causing, deprivation.

Of the 39 indicators collated in the IMD, 12 are counts of benefits claimants. However, under the UK government's austerity programme, spending on welfare benefits was slashed by nearly a quarter between 2010 and 2018; in combination

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Table 1: IMD 2019 domains, indicators, dates of data sources and weightings. Based on McLennan et al. (2019: 29–58)

Domain	Indicators	Date	Weight (%)
Income deprivation	Number of adults and children in families claiming:		
	• Income Support	2015	**22.5**
	• Jobseeker's Allowance	2015	
	• Employment and Support Allowance	2015	
	• Pension Credit (Guarantee)	2015	
	• Universal Credit	2015	
	• Working Tax Credit and Child Tax Credit	2015	
	Number of asylum seekers claiming subsistence support and/or accommodation support	2015	
Employment deprivation	Number of claimants of:		
	• Jobseeker's Allowance	May 2015–February 2016	**22.5**
	• Employment and Support Allowance	May 2015–February 2016	
	• Incapacity Benefit	May 2015–February 2016	
	• Severe Disablement Allowance	May 2015–February 2016	
	• Carer's Allowance	May 2015–February 2016	
	• Universal Credit ("Searching for work" and "No work requirements")	May 2015–February 2016	
Education, skills and training deprivation	Average score of:		
	• Pupils taking Key Stage 2 exams	2014/15–2016/17	**13.5**
	• Pupils taking Key Stage 4 exams	2014/15–2016/17	
	Proportion of:		
	• Days absent from secondary school	2014/15–2016/17	
	• Pupils not staying on in post-16 education	2010–2012	

(continued)

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Table 1: *(continued)*

Domain	Indicators	Date	Weight (%)
	• Pupils not entering higher education	2012/13–2016/17	
	• Working-age adults with no or low qualifications	2011	
	• Working-age adults who cannot speak English or cannot speak English "well"	2011	
Health deprivation and disability	Age and sex standardised rate of:		
	• Premature death	2013–2017	**13.5**
	• Illness and disability	March 2016	
	• Emergency admission to hospital	2015/16–2016/17	
	Rate of adults suffering from mood and anxiety disorders	2013–2018	
Crime	Rate per 1000 at-risk population of:		
	• Violence	2016/17–2017/18	**9.3**
	• Burglary	2016/17–2017/18	
	• Theft	2016/17–2017/18	
	• Criminal damage	2016/17–2017/18	
Barriers to housing and services	Road distance to a:		
	• Post office	March 2018	**9.3**
	• Primary school	February 2019	
	• General store or supermarket	May 2018	
	• GP surgery	May 2019	
	Proportion of overcrowded households	2011	
	Rate of acceptances for homelessness assistance	2015/16–2017/18	
	Estimated number of people unable to afford housing	2016	
Living environment deprivation	Proportion of:		
	• Homes in poor condition	2015	**9.3**
	• Houses without central heating	2011	
	Estimated level of air pollution	2016	
	Number of road traffic accidents involving injury to pedestrians and cyclists	2015–2017	

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with new conditionalities this reduced the number of benefits claimants (Ryan 2019). These policies *increase* actual poverty; yet the localities where claimant numbers were cut most deeply would record *reduced deprivation* in the IMD. During the same period, the government tightened immigration policies which attempt to exclude undocumented migrants from access to all public services, including welfare benefits (de Noronha 2020). Again, this would make deprivation appear to fall in areas with the highest levels of exclusion and consequent destitution. By utilising counts of benefits claimants as a proxy for actual deprivation, the IMD ignores those who are actively deprived by these policies.

A similar issue arises within counts of the overall population, which are used to calculate the relative rate of a given indicator within an area (McLennan et al. 2019). The number of prisoners is subtracted from all population counts within the IMD. There are methodological justifications for this removal—for instance, the relatively short duration of most prison sentences, and the automatic exclusion of prisoners from the benefits system. Yet this decision also removes prisons as sites from the map of the index. Prisoners are one of the lowest-paid groups in the UK, as they can legally receive less than the minimum wage for their labour—as little as £4 *per week* (HM Inspectorate of Prisons 2016). And prisoners also face a greater risk of early death compared to the general population, alongside far higher rates of mental distress and suicide (Health and Social Care Committee 2018). This calls into question the claim by the IMD's authors that "[p]risoners … are not at-risk of many forms of deprivation captured in the Indices of Deprivation" (McLennan et al. 2019:72). These choices in the construction of the IMD may be intended to ensure that small areas are rendered comparable, but they also render illegible the state violence of the prison system.

Even when the IMD does actively include groups that have been marginalised by state actions, the role of the state can still get lost. The Index includes, as an indicator of income deprivation, the number of asylum seekers in receipt of housing and/or subsistence support. This is important, as asylum seekers are at a greater risk of deprivation than any other group of benefit claimants. Entitled to claim a meagre £39.63 per week (HM Government 2021)—around half of a standard unemployment benefit payment—they are banned from working for the duration of their claim, generally waiting between one and three years for an initial decision about their future in the UK (Refugee Council 2021). The marginalisation of asylum seekers is a product of racist, nationalist forces which are mobilised by and yet exceed the state (Tyler 2013). However, it is a state institution—the Home Office—which sets the subsistence allowance for asylum seekers at destitution levels. This role is made to disappear within the construction of the IMD. The deprivation of asylum seekers is folded in among a range of metrics which constitute "income deprivation", presented as a single number. Disaggregated statistics for this indicator are not published; indeed, the lack of disaggregated statistics within the IMD as a whole makes it difficult for critical scholars to challenge their findings. The naming of this as a question of "income", and its subsumption within an array of indicators measuring labour market participation, attributes this form of deprivation to a nominally "private" economic sphere. In each of these

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examples, state power shapes the distribution of deprivation, but this role is occluded within the IMD.

The IMD as a Geographically Bounded Ranking

This construction of deprivation as an epistemic object has geographical effects. Most significantly, given the uneven inclusion and exclusion of marginalised groups within the construct, underlying rates of deprivation are likely to be overstated or understated based on the characteristics of the local population. This can be seen most clearly when we consider processes of racialisation in relation to IMD indicators. Townsend (1987:135) was strictly opposed to including counts of social groups in deprivation indices, fearing that this would lead to group members being viewed as "causes" rather than "victims" of deprivation. While Townsend's attempt to avoid blame and stigma is laudable, this distinction between counts of people and measurements of circumstance is theoretically incoherent when it comes to race. As Stuart Hall (2021:198) suggests, "racial structures cannot be understood adequately outside the framework of quite specific sets of economic relations". To suggest that race is separable from "underlying" circumstances is to reify racial categories, neglecting the role of socio-material processes—and indeed state actions—in their ongoing reconstitution (Bhattacharyya et al. 2021). By implying that race and materiality are separable, rather than related through complex articulations, Townsend promotes a "race blind" understanding of deprivation which occludes the impacts of historic and contemporary racism.

However, some of the measures within the IMD are intrinsically racialised. The geographical distribution of asylum seekers is shaped by racist campaigns targeting their housing (Tyler 2013), while the deprivation of benefits from migrants (and therefore their exclusion from the IMD) is a consequence of government policies driven by nationalist racism (de Noronha 2020). Most significantly, the Crime domain relies on police statistics, and the intensified policing of racialised groups—in particular young Black men—leads to higher rates of charging and prosecution (Elliott-Cooper 2021), and thus an increased measurement of deprivation in areas with larger Black populations. Beyond some unspecified references to deprivation of "working and social conditions" (Townsend 1987:126) there is no explicit support in Townsend's original theory for the inclusion of crime and disorder as components of deprivation. When the Crime domain was first being considered for introduction into the IMD, a consultation report justified this as an attempt to capture "deprivation of a socially ordered environment" (Noble et al. 1999:38). Yet state agencies can also deprive people of an "orderly environment". While the IMD measures rates of "Assault with injury on a constable" (McLennan et al. 2019:88), violence perpetrated by police is absent. State violence becomes a legitimate tool for maintaining order (Bhattacharyya et al. 2021) and is thus invisible within the IMD; meanwhile resistance to policing is counted as a source of criminal disorder (Elliott-Cooper 2021). Consequently, areas subject to racialised policing come to be measured as more deprived, while violence carried out by the police is concealed. In making these arguments, we are not

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suggesting that counts of marginalised populations should ever be included in deprivation indices: we are in agreement with Townsend (1987) that this is victim-blaming—even though many deprivation indices still incorporate such counts (Fu et al. 2015a). Rather, we wish to highlight that, despite Townsend's wish to exclude race from measurements of deprivation, the IMD currently incorporates race by the back door. This calls into question the status of the IMD as a race-independent measurement.

As the construction of the Index fixes social problems in space, so it fixes them in time. The most recent version is named the 2019 English Indices of Deprivation. However, in practice the Index collates datasets that relate to multiple time periods. The newest data in the current iteration is a May 2019 estimate of distance to a Post Office, while the oldest is a 2008 figure for the number of 15-year-olds receiving child benefit, used to estimate rates of entry into post-16 education. The modal year of data across the IMD is 2015. In effect, this is a kind of statistical archaeology, excavating the past to build an image of the present. This reveals the fundamental contingency of the IMD: shaped by data availability, and thus the calculative priorities of state agencies. Yet the naming of the Index, its consistent four-year publication cycle, and the flurry of sensationalist press reports which accompany each new release, work to conceal this contingency: this epistemic object *is* deprivation, *right now*. The state appears as a source of immediate enumerative authority. Simultaneously, the process of indexification renders invisible state violence, state exclusions, and thus state complicity in the *determination* of deprivation. And as the example of Jaywick suggests, the emphasis on the placement of deprivation operates in tandem with a politics of location that blames local areas for the problems within them (Amin 2005). It is therefore perhaps unsurprising that the IMD rankings have been seized upon by media outlets who create and circulate dehumanising images of the undeserving poor, far out on the Essex coast (Strong 2014).

Conclusion: Towards a Radical Indexification

In this paper, we have defined indexification as the process through which composite statistics transform theoretical constructs into epistemic objects, and then geographically bounded rankings. We have traced the relationship between indexification and the governmentalisation of the state, arguing that this fixes unequal conditions as a product of localities. Using the IMD as a case study, we have examined the covert politics of this statistical manoeuvre and the indexed geographies it produces. Specifically, we have suggested that small-area indices tend to hinder relational understandings of poverty, deprive communities of control over their representation, and dovetail with governmental power to conceal state violence. What is the alternative to conventional deployments of indexification? As we have emphasised, ours is not an argument to do away with indices; rather, "we need better statistics, not fewer" (Evans et al. 2019:376)—especially at a time where cuts in public spending are fuelling the loss of detailed accounts of local conditions (Evans et al. 2019).

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To conclude, then, we sketch out a project of *radical indexification* which responds to our critique, in more practical terms. If this project is to tug at "the fragile thread binding logic, ethics and politics" (Merrifield 1995:54), then it must rework indexification both in its construction of epistemic objects, and its projection into bounded spaces. It must be strategic—both in re-evaluating links between conservative ideology and quantitative methods, *and* in "imagin[ing] and creat[ing] more emancipatory constructions of economy, society, or space" through insurgent quantitative practices (Wyly 2009:317). We draw on discussions of ethics, politics, policy, and praxis across critical data science, the radical statistics tradition (Dorling and Simpson 1999; Gordon and Macfarlane 2000), and critical cartographic and statistical approaches shaped by Indigenous ontologies (Lewis 2020; Reid and Sieber 2020), (Black) feminist (COVID Black 2020a, 2020b, 2020c, 2021; Elwood 2008; Kwan 2002), neo-Marxist (Alvarez León 2016; Jefferson 2018), and critical race theories (Garcia et al. 2018; López et al. 2018; Pérez Huber et al. 2018). We argue that a radical indexification must offer democratic alternatives to the epistemic violence of imposed indicators; engage with the relational injustices of the social worlds it seeks to capture; and work from below, against hegemonic state projects. As before, we attend to the two epistemic moments of indexification in turn.

First, the *epistemic object* should be constructed through close collaboration with those who it purports to measure. Here, radical indexification can learn from the long history of activist and community projects within GIS (e.g. Elwood 2008; Eviction Defense Collaborative 2015; Ghose 2001), which offer a critique of its abstracted, masculinist positivism (Kwan 2002). These have seen geographers work with community organisations and activists to share skills and develop new theories and measurements of local conditions, to further the goals of residents (Elwood 2008). In contrast with cartographies which serve as tools of discipline and social control, for instance in the realm of policing (Jefferson 2018), these applications of GIS help marginalised communities to challenge dominant power structures (Ghose 2001). Along similar lines, Dados et al. (2019) challenged the falsities of "official statistics" with a set of alternative models, mappings, and calculations to demonstrate pervasive casualisation in Australian academia. This work was able to strengthen collective bargaining efforts in the sector—a "thicker" statistical description enabled more effective tools and practices for organised opposition (Porter 2012).

Simultaneously, indexification raises the obvious question of scaling this localised approach. While collaboration in every locality would be impractical, the construction of an index—the selection of indicators and the weights applied to these—could be undertaken in one place using participatory methods (Lewis 2020). This process could also build on existing, radical theories of a phenomenon, with researchers attempting to operationalise and then quantify these (Pérez Huber et al. 2018). This would parallel developments in mental health research, where psychiatric survivor-researchers have worked to replace clinician-designed outcome scales with alternatives rooted in experiential survivor knowledge (Rose 2018). Wider validation of these localised theories could be undertaken through surveys of implicated communities (e.g. Eviction Defense Collaborative 2015). This would not

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be to eliminate "local bias"—a radical index must be open about the situatedness of its knowledge—so much as to spur further reflexive dialogue on the oversights, partialities, and power structures shaping the index (England 1994).

If a radical index is produced through collaborative and democratic methods, these same principles should also inform its structures of data access and ownership. Most data available for the purpose of constructing an index will be produced and disseminated by state agencies (Allik et al. 2020; Southall et al. 2019). State data can, of course, be repurposed for radical ends. For instance, Barr et al. (2016)—in a project conducted in collaboration with a group of disabled activists (Pring 2022)—revealed the brutal consequences of welfare cuts around the UK drawing, in part, on government databases. At the same time, a radical approach must consider the power relations built into these relations of data ownership and dissemination; the aim should be datasets which are owned collectively by the people who created them (COVID Black 2021; Lewis 2020). The challenge is that non-state infrastructures for gathering and holding data are often part of corporate platforms (Alvarez León 2016; Elwood 2008), and therefore may be no more democratic. A solution here might look like the databases on Black health and healthcare compiled by COVID Black (2022), which aim to be free, open source, and open access.

Radical theory is not only a matter for the selection of measurements: it should also be applied to the measurements themselves. Statistics cannot be situated as a "normal science", sitting external to social phenomena which are measured and then fed into it. Here, radical indexification might learn from López et al. (2018), whose novel approach to regression analysis builds on insights from critical race theory. Rather than regressing with separate independent variables for race, gender, and class, the authors understand that inequalities intersect and therefore utilise a "saturated model" which gives an interaction term for each combination of these variables. Similarly, radical indexification might build on relational theories of poverty and inequality to measure phenomena in similar interactional terms (Elwood et al. 2017). From a neo-Marxist perspective, we might consider how to quantify the articulated relationship between class relations and race (e.g. Hall 2021). Feminist and queer analysis might push us to replace dominant binaries (including, but not limited to, gender and sexuality) with continuums (D'Ignazio and Klein 2020). Certainly, there are limitations in terms of data access and quality, but the application of machine learning techniques to big datasets may allow us to identify new patterns and measurements that have been historically occluded by dominant modes of information gathering (COVID Black 2020c). More speculatively, digital technologies might allow us to expose the constructed nature of our indices. Already the Better Life Index allows users to adjust the weights applied to its different indicators, exposing their arbitrariness (OECD 2022). Here we can imagine a future where alternative yet equivalent measurements can be instantly substituted into an index through an interactive interface, to open out the black-boxing of data (D'Ignazio and Klein 2020). Alternatively, we can conceive of a "living index" fed by API pipelines of live data, revealing the dialectic between movement and fixity which reified measurements work to conceal (Elwood et al. 2017). Interventions such as these—foregrounded

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in the presentation of a radical index rather than hidden in the footnotes of technical manuals—would highlight the decisions involved in its construction.

The second phase of indexification, the production of a *bounded ranking*, is perhaps more difficult to radicalise: the drawing of boundaries is intrinsic to the production of small-area indices. At the same time, radical indexification can still work to reveal the constructedness of this process. Again, we might imagine an interface which allows an index to be reformulated by redrawing its boundaries, exposing the modifiable areal unit problem—that is, the fact that arbitrary zoning decisions can transform the results of areal statistics (Kwan 2012). The ability to adjust measurements, boundaries, and weightings would also reveal the subjectivity inherent to indexical rankings. Of course, this critical emphasis on revealing constructedness must be balanced by a positive commitment to producing measurements which have a political impact in the world (D'Ignazio and Klein 2020). At times, this may call for a strategic essentialism, to counter opponents who rely on masculinist claims of objectivity. Yet the boundedness of indices can also be challenged in other ways. If relational theories teach us that distal connections can shape place as much as the proximate, then a radical index must find ways of acknowledging these relations. Indeed, the IMD already acknowledges this, albeit in a circumscribed fashion, by including point-to-point measurements of the distance from a major population centre to services including a GP or Post Office. This approach could be extended to further reaching relations, and here geographical network analysis could prove valuable (Uitermark and van Meeteren 2021). By considering the mathematical relationships between different nodal points within complex systems, network analysis could be used to estimate the significance of a given node (or, in this case, a small area within an index) in a network of further-reaching relations (Curtin 2018).

Our suggestions here are neither definitive nor exhaustive; instead, our aim is to spur further development of indices, in lockstep with the critical theoretical debates of radical geography. In our view, radical indexification is a form of what Katz (2001:1216) calls *counter-topography*—a project concerned with "the formation of new political-economic alliances that transcend both place and identity and foster a more effective cultural politics to counter the imperial, patriarchal and racist" contours of contemporary society. Such an undertaking connects different places with processes, such that material disparities and events occurring between and across spaces are (re)connected to "a politics of location and differentiation that links global and local scales" (Mountz 2011:383). As we have suggested, a radical indexification would go beyond processes of spatial fixity and boundary making and towards a more relational view of the world. A democratic, open-access indexification built around collective participation would aim to prevent us from defaulting to state enumerations. Most importantly, this requires the ongoing de- and re-construction of all indices: a radical commitment to publicising their conditions of production, so as to emphasise their contingency and the politics which shape them. Given the stakes of injustice and inequality today, indexification raises fundamental questions and processes that remain too important to be left to the state alone. It is our belief that critical geographers must

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take up this call in both critiquing and re-making indexification as a radical-geographical project.

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Data Availability Statement
Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

Endnote
[1] We use the term "the state" not to imply a unified or absolute political entity, but to capture a set of historically and geographically contingent political technologies and rationalities. From this perspective, state hegemony is neither presupposed nor reified; instead, like other techniques of state power-knowledge, indexification bolsters uneven and incomplete projects of governance over people and places, while also generating state effects on the ground (Painter 2006).

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