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The role of place in the development of a circular economy: a critical analysis of potential for social redistribution in Hull, UK

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This paper examines the role of place in the local development of a circular economy and the potential for consequent social redistribution. Based on a case study of public, private and third-sector approaches to a circular economy in Hull, an industrial city in the northeast of England, it offers a critical analysis of the geographic distribution of socio-economic benefits from local circular economy developments. Policy goals of inclusivity (or a 'just transition') are not accomplished. However, attachment to place provides opportunities to bridge sectoral and jurisdictional boundaries and potentially generate more socially inclusive territorial-distributional outcomes.

Keywords: circular economy, place-based, social redistribution, value, policy, UK

JEL classifications: R11, H7, Q56, Q58

Introduction

At its core, a circular economy (CE) is a resource efficiency programme, which has risen to international and national policy and academic prominence since adoption by the European Union (EU) in 2015 (European Commission (EC), 2015) and continued post-Brexit by the UK state (HM Government, 2020). Consistent with the earlier Chinese approach (Ranta et al., 2018), the purpose of a CE is to keep resources in circulation for long enough to maximise the value extracted from materials and to minimise the amount of waste for disposal (European Commission, 2015, 2020; HM Government, 2018). Enhancing the earlier call to 're-use, recycle, recovery', CE practices include multiple 'R strategies' (for example, refuse (that is, avoid buying), resell, repair, remanufacture) (Reike et al., 2018) by which material 'loops' can be closed as products/materials are retained in use rather than being discarded. Starting from the most tangible benefits of resource efficiencies, waste reductions or avoidance of carbon emissions, policymakers infer CE societal benefits to include enhanced resource security, increased competitiveness and job creation (EC 2020; HM Government, 2018). Whilst national policymakers may be optimistic to assume societal benefits are attainable at the scale of their territory (for example, EU or UK), the impacts at both smaller (for example, Newsholme et al., 2022) and larger scales (Gregson et al., 2015; Thapa et al., 2023) are even more

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questionable with current levels of knowledge relating to the sociospatial implications of a CE. Stahel (2013) sought to prioritise the local scale of loop closing for both environmental and economic reasons, yet this spatial dimension is muted in the business-oriented CE literature (for example, Bocken et al., 2016) and is not well articulated in UK national or EU CE policy (Newsholme et al., 2022).

A focus on resource efficiencies in CE definitions avoids assumptions and value judgements about the contingent societal benefits and their geographic distribution. However, many definitions *do* emphasise the CE's potential for promoting wider societal benefits (Kirchherr et al., 2017; 2023), for example, arguing the CE 'aims to redefine growth, focusing on positive society-wide benefits'. (Ellen MacArthur Foundation, undated). Such definitions may be 'transformational' in their expectations (Calisto Friant et al., 2020), but are decidedly aspirational rather empirical. The EU seeks a 'just transition', adopting a term proposing that environmental economic development should come with protection for those whose livelihood might be harmed by it (Stevis and Felli, 2020). CE practices, however, have been argued to offer new types of employment to places that have lost out to competition (for example, Morgan and Mitchell, 2015). With respect to a CE, calls for a just transition implicitly acknowledge the growth expected from a CE may not be evenly distributed across countries, regions and places, but good intentions are not supported by current business-focussed (Calisto Friant et al., 2021) and aspatial (Newsholme et al., 2022) policies. The distinction between what could happen, what is happening and what might happen needs to be kept in mind, with recognition of the contingency of potential distributional outcomes in particular places and across different national territories.

From a slow start (Hobson and Lynch, 2016), work is now addressing the social dimensions of a CE (that is, how people are involved in CE practices and implementation, for example, Schulz et al., 2019), or the potential effects of a CE on different economic sectors and social groupings (for example, poor households, young people, etc.) in particular places (for example, Lekan et al., 2021; Newsholme, et al., 2022; Rogers et al., 2021). Recent work relates CE issues to social frameworks of analysis (for example, de Souza Campos, et al., 2023; Mies and Gold, 2021) such as capabilities (for example, quality of life, equity, diversity) (Valencia et al., 2023). Much of this socially motivated examination is pitched at an abstract level, and not address concrete conditions and outcomes in particular places. Regardless, a CE is not a synonym for sustainability (Corvellec et al., 2021), even if it offers a deceptively simple policy approach to the challenges of sustainability (Cecchin et al., 2021). Notably, a transition to a sustainable development pathway in capitalism[1] can bring negative as well as positive distributional outcomes for particular places, their workforces, and local residents (Deutz, 2014). Distributional effects of policy relate to how the economic costs and benefits may be experienced by, or redistributed between, different social groups (Fullerton, 2011). The more aspirational CE approaches and economic benefits identified by policymakers implicitly see CE implementation as a vehicle for social and/or spatial redistribution. However, although there may well be winners in the distribution of societal benefits of a CE, there are almost by definition likely to be losers too. Circular economy innovations are subject to the same pressures as other developments within a market economy (Siderius and Zink, 2023). From a spatial perspective, this includes territorial competition for jobs and investment within a system driven by production for sale and characterised by conflicting demands of capital (employer) and labour (employee) (Deutz, 2014). Here we examine the potential for a CE to develop in ways that spatially and socially redistribute benefits to places and especially for the people in those places.

This paper addresses the relative lack of research into the relationship between places and the distributional outcomes of the CE. We undertake a detailed and multifaceted case study of public, private and third-sector approaches to the local development of a CE in the city of Hull covering a time period from 2018 to the present day. Hull comprises an example of a UK place facing chronic social, environmental and economic conditions, as acknowledged in the Government's 'levelling up' agenda, which aims to reduce social and spatial disparities and enhance the productivity of cities and regions (HM Government, 2022). However, a geographical perspective distinguishes between policies that anticipate an impact on places (such as CE creating jobs in disadvantaged locations (Morgan and Mitchell, 2015)) and so-called place-based policy interventions, which more directly seek to find benefits for specific places by bringing together different co-located sectors and communities around 'joined up' economic, social and environmental policies to foster resilience in urban and rural development (Marsden and Farioli, 2015; Neumark and Simpson, 2015). Potentially, these place-based ambitions could be addressed by unlocking the material and more contested social benefits of the CE. Drawing on methods including semi-structured interviews, survey and document analysis across CE aspirations and activities of multiple sectors, we analyse public, private and third-sector CE participation and collaboration to address the question: how, and to what extent, can a place like Hull benefit from a CE and in turn develop from the 'bottom up' a more socially inclusive and just circular economy?

The following sections we (i) review the place-circular economy literature relating to places in the light of discussions about place in geography; (ii) present the methods and introduce the case study; and (iii) use the findings to discuss the relationships between sectors and the implications of these for cross-sector place-based collaboration

around the CE. The paper concludes with some critical insights into the potential for, and limitations of, a socially just transition around a place-based approach to the development of the CE.

Place, policy and the circular economy

What characterizes a geographical approach in CE is the understanding of place as something more than a certain physical location. Places have meaning for their inhabitants (individual and organisations) which may not accord with outside observers' views (Cresswell, 2014). Even the territorial definition is complicated by often incongruent political, physical, and jurisdictional boundaries (Warnaby, 2009), complicating the identification of place (Paasi, 2003). Additionally, places are best understood as relational insofar as local people and businesses have social and material connections and attachments that transcend local territorial boundaries (Massey, 1991; Stedman, 2002). Furthermore, places exist within a multiscalar state, governance and other social hierarchies (Jonas, 2006). Scale therefore is important for understanding the changing societal and governance capacities of places and regions. Brenner (2004) argues that the rescaling of statehood has resulted in powers and responsibilities for economic development being transferred to urban and regional authorities, but firmly within the constraints of national policy and funding (Farrelly, 2010). At the same time, there is a non-territorial correspondence of state and non-state governance capacities. For example, companies, depending on how their organisational structures and supply chains stretch across territory, can have quite different urban and regional allegiances and dependencies than those of local state authorities (Coe et al., 2008; Cox and Mair, 1988). Thus, the study of a place can illuminate how hitherto disconnected societal processes operating across scales converge within a place and the particular socio-spatial configurations, contexts and conditions resulting from and reproduced by that process of convergence.

Developing a CE for places

The relevance of ideas relating places and territories to CE development is most clearly captured by policy approaches that are trying to establish CE activities in particular towns or regions. Such approaches to the CE, aiming to collectively benefit businesses, community organisations and the public sector in specific places, can be contrasted with national policies that target specific economic sectors or social groupings irrespective of location and place. Geographers emphasise that spatial policy outcomes are contingent on context, especially the unique social structure of a place resulting from successive rounds of public and private investment (or disinvestment) over time (Massey, 1995; Marsden and Farioli, 2015 and see Deutz et al., 2015). Recent work examines territorial dimensions of CE policymaking (Bourdin et al., 2022), for example, proposing factors constraining a CE in a certain territory (for example, Tapia et al., 2021). Amenta et al. (2022) examine CE as a framework for the redevelopment of abandoned industrial land, pointing to the collaboration between the city and port authorities of Rotterdam (De Martino, 2022). Taking a multiscalar approach, Newsholme et al. (2022) found a double disjuncture between policy scales (for example, regional and national structures of the state), on the one hand, and the different scalar priorities (for example, generating local tax revenue, sourcing global supply chains, etc.) of local authorities and companies respectively, on the other, which together limit the ability of local authorities to tackle complex policy issues, such as CE transition. Taking an explicitly 'place-based' approach, Howard et al., (2022) propose that small- to medium-sized companies can benefit from incorporating local connections and considerations in developing CE strategies. Usefully, they refer to ecosystem, business and social values but without addressing the distribution impacts we assess through the approach outlined below. Multi- and cross-sectoral influences on developing CE activities in places also need to be addressed.

Cities offer the potential for establishing and studying spatial expressions of CE. Circular city initiatives have attracted academic attention (for example, Petit-Boix and Leipold, 2018; Williams, 2023). CE approaches in European cities tend to over-emphasise sociotechnical actors such as business and technology (Fratini et al., 2019), even in cases like Amsterdam where city-wide CE initiatives have come with socially inclusive rhetoric (Calisto Friant et al., 2023a). Moreover, circular city initiatives often rely on long-loop strategies (notably recycling) at the expense of more holistic approaches (Petit-Boix and Leipold, 2018). Spatial planning could play a key role in facilitating a place-based approach to the CE (Fidélis et al., 2021). However, whilst planning can be used to mediate between potentially conflicting policy priorities in places (Williams, 2023), it cannot protect against wider market-driven forces determining levels of inward investment, as demonstrated by the short-term survival of spaces set aside for circular community projects in London (Williams, 2023). Calisto Friant et al. (2023b) draw on urban literature to propose alternative place-based initiatives such as slowing consumption and planning for post-growth. Such initiatives depend upon a radical transformation of national policies not achievable at the urban scale. Potentially, however, policymakers could give further consideration to local initiatives within their territory, that is, taking a place-based approach in the sense of learning from the place.

Questions remain as to how to determine the most effective approach – or combination of approaches – for local CE development in a given place and the potential socio-spatial distributional outcomes of that development. Here we propose the adoption of an approach that focuses on

social interactions and relations operating between sectors and across scales by examining the 'circuits of value' underpinning the place-based development of the CE.

Places, circuits of value and CE development

Building on diverse economies literature (for example, Hobson, 2016), itself a reaction to the lack of academic attention to the diversity of economic enterprises and social practices operating within the mainstream global economy (Gibson-Graham, 2008), Lekan et al (2021) have developed the idea of a locally emergent CE by incorporating the concept of 'circuits of value' (Lee, 2006, 2013) into an analysis of the relationship between place and CE. This concept recognises the multiple and intertwined characters of material (for example, recycled commodities) and non-material (for example, voluntary labour) transactions and the local economic spaces through which resulting value in the form of money and/or commodities (re)circulates (Lee, 2013). Examples of socio-spatial practices that lubricate the local development of a CE include *inter alia* assisting a neighbourhood-based charity using voluntary labour to process used goods for provision to people in need, or alternatively promoting upcycling used goods (for example furniture) for sale (back) into the monetary economy (Lekan et al., 2021). High street charity shops are examples of organisations offering short loop CE activities whilst drawing on voluntary labour (Dolphin et al., 2023). We use the term 'social enterprises' to include these and other organisations that invest profits to social and/or environmental benefit of the community (Longhurst et al., 2016).

The concept of circuits of value refers to the transactional flow of value in its different forms (that is, material goods, money, or intangible social relations like trust, etc.) between individuals and organisations across and through space. Unlike much of the CE literature, it captures the non-material (that is, social), in addition to the material, elements of a CE (Lekan et al., 2021). Whilst material commodities have a use value (what they are practically suited for), ultimately their exchange value (what someone will pay for them) drives the flow and movement of materials and products across and through space (notwithstanding some perceived use value is necessary for the transaction, even if the only use is to sell on) (Marx, 1977). Conversely, in 'diverse' CE transactions (where nonetheless money may be involved) the use value is the determinant of exchange – the social, environmental, cultural or other benefit perceived as being desirable by the recipient, and which the donor either does not need, or want, or is prepared to give up (for example, time, expertise, or physical space as well as a material thing) (Lee, 2013; Lekan et al., 2021). How local loop closing (an aspiration of some CE proponents (for example, Stahel, 2013)), drawing on non-financial and non-material values fits into the wider picture of CE practices across a place and the related distributional benefits need to be examined. Herein we are using the circuits of value concept presented in Lekan et al. (2021) as an approach to examine our cross-sectoral case study in order to consider the implications for the spatial (re)-distribution of social benefits in a particular place.

In the remainder of this paper, we apply a 'circuits of value' approach to better understand the relationship between the different manifestations of the CE found in and around Hull and its wider region (North Humberside). We deploy mixed social research methods to investigate CE activities, motivations, circuits, flows and loops across different sectors and enterprises, and at different scales. Finally, we critically examine the extent to which stronger cross-sector collaboration around the CE can have social and distributional benefits for people in a place ostensibly undergoing a just transition.

Methods

Drawing on critical realism (Fletcher, 2017; Sayer, 2000), we aim to uncover the causal mechanisms and contingencies around the local development of a CE in Hull that may offer lessons to other places (Cox, 2021). Undertaking an in-depth case study including different perspectives allows the appreciation of processes and relationships unfolding across space within and between the empirically observable dimensions (Ollman, 2003). Thus, our multisectoral approach offers a more holistic view of CE development than focusing on one sector, and in particular allows us to address the flows and exchanges between sectors. The research drawn on in this paper was undertaken by three researchers collectively examining the social and geographic distribution of benefits from a CE. In this section we first explain and justify the selection of Hull, and the outline the different aspects of CE in Hull through which we can build a picture of the circuits of value and their redistributive potential.

Hull was selected as a case study given the extensive knowledge of the city and wider region of the first and second authors. Along with spatial proximity, local knowledge afforded the researchers the ability to build connections through secondments, participation in local networks and extensive engagement with project partners, including the local authority (LA) and a local social enterprise (SE). Empirical analysis focused on understanding the motivations, practices and challenges involved in implementing a CE locally in order to identify not just its emergent local form(s) but also underlying constraints and causal mechanisms, that is, what must necessarily be in place in order to generate a CE, and what is contingent on local circumstances? The identification of causal mechanisms and contingent conditions in a place like Hull could further assist in identifying those attributes of a CE that might be – or already are – replicated

in other places. As explained below, Hull is an ideal case study for examining a place-based approach to the CE as it has been described as a 'structurally disadvantaged city' (Wurzel et al., 2019), which is vulnerable to climate change and undergoing a transition to a carbon neutral (Net Zero) local economy, and therefore could potentially benefit from the geographical (re)distribution of jobs in a CE (Morgan and Mitchell, 2015).

Case study: Hull and its surroundings

Kingston upon Hull (henceforth, Hull) is situated on the Humber Estuary on the east coast of England (Figure 1). With a resident population of 267,010 in 2021 (Hull City Council (HCC), 2022), the city is surrounded in all landward directions by the more prosperous and sparsely populated East Riding of Yorkshire (ERY). Functionally, Hull serves as the urban centre for the region, with a 'travel to work' population of over 550,000 (HCC, undated). There is no formal regional scale of governance in England; Hull is part of the statistical region of Yorkshire and Humberside (where Hull and ERY comprise North Humberside, and two authorities south of the estuary comprise South Humberside). The Hull and East Yorkshire Local Enterprise Partnership is a UK government sanctioned business-led organisation for promoting economic development for North Humberside. The city's ports once exported coal on a large scale; more recently the region imports coal and biofuels for the region's (reformed) electricity generation capacity. North Sea gas comes onshore in the region, nearby to the cables bringing electricity from two of the world's largest offshore wind farms producing a combined total of 2.5 GW of energy (Ørsted, undated). Also home to oil refineries, cement and steel works the regional industrial cluster employs some 50,000 people and is the largest emitter of industrial carbon in the UK (10Mt CO_2 equivalent pa: HM Government, 2021).

Hull is a prime example of a town that has been 'left behind' and in need of levelling up (HM Government, 2022). It is one of the most socially deprived of the 60 largest UK cities as measured by indicators of poverty, health, unemployment and skills; and many of its neighbourhoods fall in the 20% most deprived areas in the UK (HCC, 2022). There is a strong food-based economy in the region, drawing on the agriculture of East Yorkshire and reflecting the lasting influence of Hull's former fishing industry and associated food processing (Starkey et al., 2017). Loss of

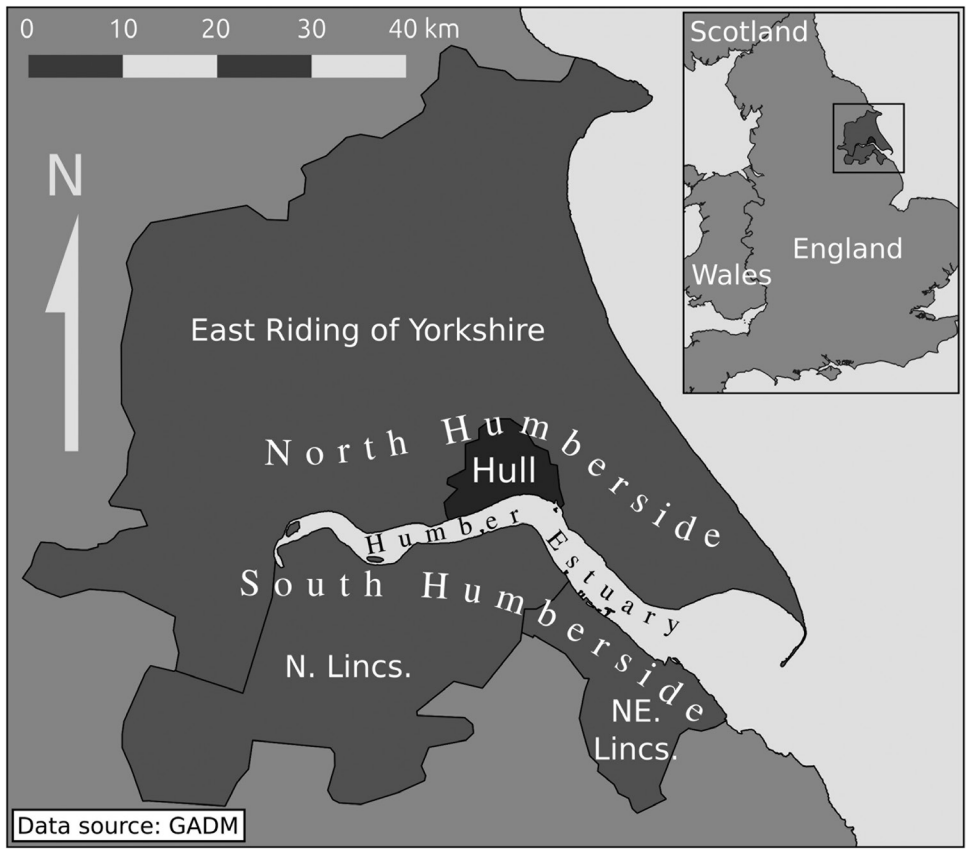

Figure 1. Map showing the location of Hull in the regional and national context (maps produced by Cyrille Medard de Chardon).

access to Icelandic fishing territory and the shift of port industries to deeper water facilities on the south bank of the Humber have contributed to the entrenched cross-generational deprivation in the water-facing wards of the city. One of these, ironically, is home to food UK's most severe 'food desert', that is, an area that lacks access to fresh and healthy food products (Corfe, 2018). Some optimism greeted the emergence of the offshore wind industry, which offered an approach for Hull to attempt to simultaneously protect against the impacts of climate change (predominantly flooding) whilst finding new basis for economic development (Wurzel et al., 2019). However, the socio-economic vulnerability of the region is indicated by Hull's worse than UK average job loss from the 2008 financial crash and predicted vulnerability to the economic impact of the COVID-19 pandemic (Norman and Petrie, 2020).

Following from the characteristics of Hull outlined above, the sectors comprising the focus of our study are the public bodies (local and national); companies with a base in the Hull or East Yorkshire, as well as local industry bodies and networks; social enterprises and small companies in the repair sector. The methods of data collected are shown in Table 1. Additionally, the public were surveyed for their experience of and attitudes towards repair. A combination of purposive and snowball sampling was used, that is, targeting representatives of relevant public bodies and large companies with a presence in the city and region. Documents relating to economic development, sustainability and CE-related topics were obtained from the websites of local and regional public and industry bodies. Business documents are selected from companies both with a base in the region and publicly accessible sustainability reports. Thus, they are not self-selected or pre-selected as CE front runners. Documents were analysed using a discourse approach outlined in Newsholme et al. (2022).

National context

The UK is continuing the implementation of CE policy to which the national government contributed whilst still in the EU (HM Government, 2020). Implementation at the sub-national scale in England is closely tied to resource policy (HM Government, 2018). Focusing on issues considered to have solutions, a holistic or systematic approach is lacking. Policies acknowledge findings of the Waste Resources Action Programme (WRAP) (HM Government, 2018; HM Treasury, 2021; Morgan and Mitchell, 2015) pointing to the range of skills needed for local resource recovery operations generating jobs and investment that may help offset geographic mismatch of jobs in the south and stubborn unemployment in the north of England. CE activities are seen as contributing to the decarbonisation agenda (HM Government, 2021), which is also considered part of the UK state's Levelling Up strategy (HM Government, 2022). These policies emphasise spatial redistribution across UK territory through promoting 'fair and inclusive' economic development and removing structural barriers to individuals and businesses in the so-called 'more deprived' areas of the country. Thus, compared to the EU approach, the territorially 'just' or 'inclusive' element of UK policy is arguably quite separate from the environmental-economic transformation.

Uncovering a circular economy in and around Hull

In this section, we qualitatively analyse the multi-scalar and cross-sector dimensions of the local development of a CE in Hull. The analysis highlights three dimensions: (i) activities and motivations; (ii) circuits, flows and loops; and (iii) distributional outcomes.

Table 1. Methods employed to examine the sectors addressed in the paper (data collection 2018-2021). For more details see Rogers et al. (2021), Newsholme (2023), Pusz (2023), Rogers et al. (2024).

Sector	Methods
Public bodies	Three semi-structured interviews with national public bodies; six with city/regional public bodies; policy analysis; two six-week placements with HCC
Large companies	Semi-structured interviews with 1–4 individuals from each of eight companies; three with city/regional business-led bodies; document analysis
Social enterprises	31 semi-structured interviews conducted with representatives of social enterprises, six semi-structured interviews conducted with support infrastructure organizations; placement at one SE; document analysis
Public opinion of repair & experience of self-employment in repair	Online public survey (= 740); five semi-structured interviews with self-employed repairers (two seamstress/tailors; one each: televisions; electrical, appliances); document analysis

Table 2. Summary of sectoral engagement with a CE (*sources*: based on analysis of data gathered by methods shown in Table 1*)

	Companies: large	Self-employed	Local authority	Social enterprises
Vision	Company/global	Personal	Place Seeking inclusive/fair development, CE not part of that	Community, personal/ organisational See themselves as part of SE network but not as part of CE system
Motivation for CE activities	Environmental, waste related; regulatory compliance; cost saving	Economic: personal subsistence Social: customer satisfaction	Environmental; decarbonisation CE a company responsibility, with a coordination for LA	Social; community support; waste reduction
CE activities	Recycling, waste reduction; some offer maintenance services; donation of surplus materials/ waste; participation in environmental company networking	Repair: textiles, electronics Delay recycling/disposal	Devising a strategy for CE Recycling (waste collection and disposal authority)	Material/product recovery Community activities
Value relationship	Monetised exchange: sale of new products from purchased inputs, embedded & local labour	Monetised: selling a service Extending life of market products w/ embedded labour/energy	Large local employer Directly support (or contract out) local services; grants to SEs	Use value Supporting clients outside of market economy (though they may also have a job &/or benefits)
Scale	National/international requirements Global – inputs/sales; CE development via supply chain, or company branches	City	City; collaborate with neighbouring authority; Constrained by national policy	Inputs: local to global Outputs and services: community to city
Benefit to Hull	Employment; tax; some local inputs/services	Small scale employment, service	Administration, service provision, planning, funding to SEs	Improved well-being of residents, competitively priced service provision
Constraint	Financial, knowledge	Time, business skills Access to information and parts	Financial, knowledge, time; Statutory requirements, power	Grant writing skills (financial), managerial skills, time

* For further information on each category discussed separately see: Newsholme et al. (2022), Newsholme (2023), Pusz (2023), Pusz et al. (2023), Rogers et al. (2024).

Activities and motivations

The large companies interviewed and HCC both identify CE as an extension of sustainable waste management (Table 2). These stakeholders are also the ones motivated by environmental considerations. For companies their CE motivation is very much driven by waste-related regulatory requirements, albeit decarbonisation is also a priority (Zero Carbon Humber, undated). For HCC there are two dimensions – their statutory responsibilities for recycling (which is somewhat overlooked in discussions of CE) and CE as one element in their decarbonisation agenda (HCC, 2020). Given Hull's markedly high carbon economy, there is an urgency for a transition protective of the local economy. HCC is responsive to this and well aware of the social challenges in the city. Their policy statements emphasise the need for 'inclusive' development, also using the word 'fair', explicitly and stating that economic development is a means to the end of shared benefits, not a goal in itself (HCC, 2021). However, they do not explicitly ascribe a role for a CE in achieving this.

Conversely, for the self-employed and SEs, the environmental benefits of their activities are a fortuitous side effect rather than a motivation. For these individuals and organisations motivations are social and economic. The

self-employed repairers are working in the field to earn a living – notwithstanding a social dimension, this is an economic motivation. For SEs, social and economic aspects are entwined. They are taking advantage of economic opportunities through organising/facilitating re-use, recycling, sharing activities but as a means to social ends whether that is providing arts and crafts opportunities utilizing used materials, or supporting mental/health initiatives, or helping financially constrained individuals access consumer goods (and even food) that they could not afford to buy new at market value.

Circuits, flows and loops

Short-loop activity comprising repair, re-use is most readily found within the operation of SEs and the self-employed. Longer loop activity, such as recycling, is carried out by the local authority (post-consumer) and companies (pre-consumer) as well as the SEs (Table 2). The larger multinational companies are focused on market-driven exchanges and values. Their scale of activity (including material and financial circuits) is global – citing need for specific inputs and certainly a market beyond the capacity of the region. An attachment to place is indicated by participation in local/regional networking activities, but these are adjuncts to commercial activity (for example, sharing best practice on reducing plastics or decarbonisation). CE is not conceptualised by these companies as a place-based activity. Rather, they regard CE as something to be acted on either internally or within their supply chain, that is, collaborating with companies with which they have a commercial relationship.

SEs are actively helping to keep materials circulating in the local economy, for example, finding someone who can extract residual use value from discarded items (for example, furniture). The perceived use value remaining in the donated items may be sufficient to attract a monetary exchange value, which helps support communities locally in a range of 'good causes'. The SEs receive local material flows from companies locally. Local companies donate goods that may be by-products of local production or might have been unsuccessfully intended for local consumption. Donations by companies arguably indicate an attachment to place, and are put to good use, but the SEs are equally useful to the companies by enabling them to avoid disposal costs (albeit there is more material available than the SEs can handle). Donations include food both from local producers and surplus from local branches national/international supermarkets/companies.

Notably, (re-)sale of even donated goods (from the public as well as companies) does not raise sufficient funds to support the operation of the SEs. The exchange value of these recirculating goods is constrained by the cost of a new equivalent, tempered by the extent to which it continues to meet current expectations (Harvey, 1982). Perceived social or environmental benefits of reuse may boost the exchange value. However, if the well-being of customers is the desired social benefit of the exercise, the price may be lower than the retail value (as is the case at one SE where donated food is sold for what people can afford to pay). What makes the enterprises viable is the availability of donated (that is, voluntary) labour and space (use of buildings owned by other organisations). These are examples of 'diverse' economic activity, drawing on non-market values/capital, but there are shortcomings to this (for example, low-cost buildings requiring expensive repairs). In Hull some funding to SEs is the result of the city council subcontracting social responsibilities (that is, functions deliberately selected, such as mental health support, and the CE-element coincidental to the LA); other funding is the result of open competition with the function at the discretion of the SE. Accessing such funding is dependent on grant writing abilities. There is therefore competition between SEs, with some level of distrust with proximal rivals over their territory, although larger and more experienced SEs can provide support/credibility for others.

Nonetheless, any efforts to encourage policies enabling SEs in Hull to win UK government contracts, such as those related to introducing social value policy and social CE agenda that would acknowledge/foster social-circular public procurement and commissioning of goods from the third sector, have limited potential due to the financial precariousness of local authorities. Moreover, any contract negotiations underpinning collaborative procurement processes, and which would advocate for more involvement of re-use SEs in waste management, are impeded by the lack of a more advanced recycling infrastructure in the city. In any case, the CE functionality of the SEs is outside of the city's vision for a CE, although a growth in the number of SEs is seen as a measure of success in terms of building a more socially inclusive economy (HCC 2021).

The self-employed repair sector also appears to be outside of HCC's CE plan. This sector is the least connected with the others studied, yet is firmly embedded in the place. Arguably of all the aspects studied in Hull, this sector is closest to the vision of Stahel (2013) of economic opportunity generated locally by activities associated with local loop closing. Repairers are promoting the retention of value embedded in products locally – at least delaying the environmental impact of their disposal and avoiding costly transport logistics of centralized repair options. The goods, however, are the result of global production and distribution (which does not preclude some being national or even more local in origin). Repairers are drawing on the marketable skills they possess to earn a living independently (these skills were not solely the result of formal education) (Rogers et al., 2024). The market value of those skills is limited by the level of financial commitment people are prepared to make to their possessions. A study of public opinion in Hull refers to the relative cost of repair as

against replacement as a key barrier (Rogers et al., 2021). It also indicated that more highly educated people were more likely to have something repaired than others – suggesting that in at least some instances repair is an environmental choice for the consumer, even if not primarily to the repairer. Those working in repair are trying to extract a sufficient living to engage with the market economy by performing a service on goods made and sold by others. Interviewees found this challenging, not because of a lack of demand, but because of the limits on what they can competitively charge. Some had taken employees; others did not have a desire to or did not feel qualified to take on the administrative tasks of being an employer. The sector may become more precarious in the future with the emerging repair café movement (so far with limited representation in Hull), encouraging volunteering and training of the public which may serve to undermine the market for repair services at the same time as helping to increase the demand for repairs. Thus, local outcomes are contingent on national, or in this case international trends, which might have the same overall goal of circularity but can bring about new spaces of competition.

Distributional outcomes: CE benefits for Hull and its people?

In Hull, there is a very close connection between the socio-economic status of the city and the expression of the local CE. The industrial legacy is also influential, with decarbonisation issues prominent. Given the particular social characteristics of Hull, the SE-led economic sector is well-established and perhaps unusually visible. Based on the research undertaken, this is the most active expression of the CE locally, comprising various actions of re-use, resale, sharing, repairing (also via the self-employed sector) and recycling. This suggests that Hull is developing a bottom-up CE, focusing on local closing of short (consumer-centred) loops, albeit so far without express acknowledgement of this by the city. The quantitative impact and environmental effectiveness of these activities are so far unknown, but investigating that could be a good first step towards developing and integrating the local authority with the 'bottom up' CE for a place-based approach.

SEs are providing access to repeated short-term solutions for communities that are consistently excluded from more profound support. CE activities reflect and reproduce the local distribution of wealth rather than contributing to 'levelling up' (rebalancing of growth) either on a national or local scale. There is an irony to supermarkets donating food to communities where they are not represented because shops there would not be economically viable. Notwithstanding the synergistic relationship, in a more critical interpretation the situation helps to perpetuate a dependency on welfare support. Given the low levels of car ownership in these communities (itself a symptom of deprivation), their choices are practically, as well as economically, constrained. Companies are supporting their own image whilst saving on the cost of disposal. The apparent contradiction of organisations contributing to the reproduction of the condition of those they seek to support reflects the wider challenges of capitalism and the level of agency of small organisations. They are doing what is in their ability both to help people (which is necessary in the current circumstances) and also to protect their own survival (Pusz et al., 2023). They cannot impact the wider dynamics (job availability, benefit levels). Indeed, the companies are the more powerful partner in the transaction. If they find alternative arrangements more favourable to themselves, this particular circuit may be broken.

HCC may appreciate SE- or community-led local development as an economic model distinct from profit-making (c.f., Calisto Friant et al., 2023b; Dacin et al., 2011), but in terms of job creation and retention, the city looks to the private sector. In reality, SEs have a limited capacity to generate jobs, being dependent to an extent on grants from public bodies including HCC, and also reliant on volunteers (likewise for charity shops in Dolphin et al.'s 2023 study). Furthermore, employment in SE sectors is often fixed-term and cyclical. Likewise, local repair enterprises are economically marginal. Participants may see themselves as economically self-sufficient but are also not achieving a sustainable quality of life (Valencia et al., 2023). An ongoing concern is to equip people to work for local companies in existing roles or to meet anticipated future skills needs, that is, entering into more directly capitalist relations (as opposed to supported by measures paid out of taxes), which have produced and reproduced the uneven landscape of the present. Companies locally may indeed increase the adoption of CE approaches, but based on current intentions the benefits of that cannot be assumed to accrue to Hull (other than in a general sense of eco-efficient companies being preferable to others). Hull's coastal location with its vulnerabilities (for example, flood risk) has nonetheless brought an economic opportunity (in renewables). These, however, have not counteracted entrenched socio-economic deprivation. It is unlikely that either decarbonisation or more specific CE initiatives will do that either in the absence of deliberate, well-crafted and well-resourced policies at the national level that are cognisant of the local social, economic and spatial relationships reproducing the situation.

Spatial co-location in and around Hull has fostered flows of materials and funding between the public, private and third-sector bodies that belies the superficial distinctiveness of their respective CE activities. This may offer a route to identifying shared interests and potential synergies of resources and skills on which to build further collaboration. Spatial planning needs to acknowledge the role of, and include, SEs and very small companies (that is, the self-employed) in delivering the short-loop solutions in

particular (Williams, 2023), but needs to be in tandem with social programmes. The jurisdictional boundary between Hull and neighbouring local authorities means little to the large companies present in one or the other. The synergies between local authorities could be better exploited, albeit some level of competition between them may remain (whereas in the case of Rotterdam, the respective contribution of the two authorities, the port and the city, is more clear-cut (De Martino, 2022)). An initial, not transformative step, would be for the local authority to call on the goodwill of companies with a local branch as a source not just of (unwanted) materials, but also business and commercial skills to be transferred to SE/self-employed. Indeed, companies may perceive benefits to building local connections in practice of CE (Howard et al., 2022). Local authorities may find contracting with companies less risky than local providers such as SEs (Morgan, 2008), but there could be improved access for SEs in social-circular public procurement to reflect potential social-circular outcomes. However, this would involve entering into contractual arrangements where progression outcomes are measured in terms of, say, acquisition of skills relevant to a CE (for example, repair) rather than traditional measures such as entry into mainstream full-time employment. Whilst providing a focus, these activities could also engender other connections, building familiarity and trust between different sectors and communities. Whilst company priorities may necessarily be global, their employees are based in specific places and the human connection may prove influential in co-developing CE and social activities which together with a coherent national *social* policy may help to foster a socially inclusive, just transition, locally.

Conclusions

This paper has demonstrated a deeply intertwined relationship between the nature of a place and its developing CE. The form that CE takes reflects relationships and circumstances locally, but also the multi-scalar and dynamic policy and economic context. Context includes both directly CE-facing policies and material flows, but also other contingent circumstances including the legacy of past (industrial) relationships, flows, sectors and spaces. Thus, in Hull extensive use of short-loop CE activities (re-use, sharing) by SEs and the self-employed are not environmentally driven, but a reflection of changing global circumstances and the lack of an effective national response. The connection between SEs' implementation of the CE and deprivation needs examining in different types of locations, but Hull demonstrates the precariousness of this as a route to a just transition. Employment, as well as the supply of materials, remains dependent on the market-driven economy. A socially inclusive or spatially 'just' distributional outcome cannot be achieved incidentally on the coattails of environmental policies (even one with strong economic potential). Future-proofing a local economy ought to involve promoting CE activities, but for these to bring more than short-term, or marginal, opportunities, social dimensions need to be an explicit policy priority. In locations that have been disadvantaged in national and/or international economic trends, a strong national intervention is likely to be needed.

In any given place, as different types of organisations (large/small, public/private, or third sector) enter into CE-related exchanges, these are interrelated. What connects all the local stakeholders are their various spatially defined connections to the 'mainstream' economy, itself comprising multi-scalar and cross-sector circuits of value (Lekan et al., 2021). The various sectors, including notably enterprises (large and small) that bridge the mainstream and diverse economies, together constitute the local expression of the capitalist economy. Fundamentally, even a place-based CE is inextricable from the wider capitalist economy, and therefore subject to its imperatives, contradictions and contingences. The market-driven class relationships associated with capitalism are not altered by circular flows, despite the local place-based development of the CE creating opportunities for new cross-sector synergies with accompanying social and distributional (dis)benefits. The extent of place-based collaboration around the CE is thus less the direct result of a national CE policy and more due to the intrinsic, yet contingent, character of a place, including its industrial legacy and social structure.

In terms of future CE policy, the task is to find a viable relationship to the national/international economy that reflects urban and regional contingencies, circumstances and cross-sector synergies – and to provide support to develop those synergies to promote CE activities locally. In other words, we recommend that when following national injunctions to implement a CE, local/regional policymakers adopt a place-based approach to the CE, whereby they draw on an in-depth understanding of the place and existing CE activities. We suggest that there is potential for different types of enterprises (multinational companies, SEs, etc.) to collaborate around activities that help to close some material loops at the urban and regional scale. Given the cross-scalar links of both companies and SEs working with their offcuts, however, a truly or even substantially closed local CE seems very difficult to achieve in a market-driven system. Locally-driven social redistribution is likely to be modest in scope and highly contingent on circumstances at the time, reflecting the different level of choice and financial clout of the participants.

The multi-sectoral study undertaken here has helped to expose the structural limitations of a local CE, but has nevertheless revealed CE-attuned relationships that could be built on, locally. Individual sectors derive quite specific economic and social benefits from the CE, and may indeed have different visions of the place. But a common attachment to place may offer opportunities to engage in cooperation and collaboration bridging local sectoral

and jurisdictional boundaries, whereby each contributes according to their synergies and strengths. The CE transactions set into motion through such a place-based approach would comprise a form of social redistribution, albeit of likely marginal economic advantage to those most in need. The frame of reference in local CE policy discussions therefore needs to be more socially and spatially inclusive – that is, bringing together large and small companies, public sector, third sector and (most complicatedly) some representation of the public (local civil society). Importantly, if the intention is inclusivity (that is, a just transition to a CE), then the policy conversation must be framed (and resourced) with this in mind. From a CE perspective, that puts the question of value and how it is measured – materially *and* socially - in at the forefront of the debate. Otherwise, CE risks being a distraction – that is, offering an illusion of a social policy when, by itself, the only result can be the reproduction of existing material and social circumstances.

One of the distinctive contributions of the paper is to provide an approach for future analysis of place-based policy approaches to the CE. Whilst the emergence of 'circular city' initiatives across the UK and Europe is testimony to the potential connection between CE and place, few studies offer critical insights into how to analyse that relationship. This paper suggests that future analysis should highlight three dimensions of CE in places: (i) CE activities and motivations across sectors; (ii) circuits of value encompassing the various forms that it can take and (iii) use those insights to evaluate distributional outcomes. The latter in particular, we argue, should be critically evaluated, that is, what is the socio-spatial distribution of benefits?

Although ambitious in scope, the present study has gaps which future research could fill: small- to medium-sized companies were excluded; the study of work was confined to the self-employed; and community sharing arrangements aside from SEs were not considered. A quantitative study to establish the dimensions of the local CE would be instructive. Further research is needed to explore the CE relationships in different types of locations (in terms of their industrial history and national/regional context). Pockets of deprivation can be found in many towns and cities more prosperous overall than Hull; research should examine the extent to which the relationship between CE social exclusion manifests in such locations. Here we have focused on economically defined social inclusivity, but other measures such as gender, ethnicity and disability and their intersectionality should also be considered.

Endnotes

1 'Capitalism' and 'market economy' can both include national political approaches on a spectrum from an unregulated free market to a high degree of state control. These approaches comprise 'varieties' (Hall and Soskice, 2001), within a global capitalist economic system.

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