

What is an urban just transition? Grappling with an unsettled concept in an industrial region

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Abstract

As global decarbonisation pressures grow, so do calls for ‘just transition’. Urban and regional governments are exploring what this means for their jurisdictions. This article investigates how urban policy makers make sense of just transition, and the implications for its understanding in urban policy. We adopt Q-methodology to examine sensemaking for policy stakeholders in a UK industrial region, producing a new analytical conception of sensemaking through conceptualisation, contextualisation and operationalisation. This allows interrogation of how unsettled concepts like just transition are translated into legible policy entities. We found participants wrestled to resolve just transition with path-dependent narratives, reaching for existing policy discourses to modify just transition. As sensemaking moved through different stages existing narratives layered up, reducing transformative potential. Collectively, these suggest openness to just transition as policy logic but a challenge to embed transformational approaches. Cognitive and cultural dependencies are central to this challenge and our findings point to specific ways these dependencies are manifest.

Keywords

Just transition, net zero policy, path development, sensemaking, urban and regional governance, urban just transition

Introduction

Just transition requires rapidly decarbonising human activity while supporting inclusive and equitable human development. It presents a departure from existing policy norms. But to what extent do policy makers see just transition as a transformative policy objective?

The article provides an original examination of just transition-in-practice through empirical research with high-level stakeholders (senior policymakers, private sector, public sector and civil

society leaders) in the old industrial region of South Yorkshire, England. We relate this process to understandings of path development and path dependency through a novel conceptualisation of sensemaking. Utilising Q-methodology, we advance conceptualisations of urban and regional

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just transition by bringing these conceptualisations into more direct conversation with the practice of urban governance. We investigate in detail how just transition might be translated into action in real-world contexts of governmental jurisdictions, capabilities and political agency, emphasising cognitive and cultural challenges to enacting transformative change.

Cities across the world have declared climate emergencies and pledged to strive for ‘net zero’ carbon emissions. Climate action is necessary but people and places will be impacted in different ways. In response, a growing literature is assessing the social and spatial implications of decarbonisation (Garvey et al., 2022; While and Eadson, 2022). Old industrial regions are particularly affected, having both undergone extensive economic restructuring since the 1970s and, because industrial processes are often carbon-intensive, become exposed to decarbonisation imperatives.

In this context, urban governments are considering what is needed to ensure just transition to net zero, mirroring widespread international consensus for using just transition as a framework for action. The Paris Agreement (United Nations Framework Convention on Climate Change (UNFCCC), 2016) includes commitment to just transition. The European Union has also incorporated a Just Transition Mechanism. National and devolved governments across Europe have implemented just transition policy too.

To date, there has been no explicit examination in academic or policy literature of how policy stakeholders understand urban just transitions, and resultant implications for achieving such transitions. Examining how policymakers translate new concepts for application to their own situation and worldview is critical to better understanding governing processes. While evolutionary perspectives on urban and regional development such as socio-technical transitions and path development have examined in detail the contextual nature of developing new trajectories (Chlebna et al., 2023), the importance of cognitive factors in such processes has received less attention in these literatures. Very little has been said about specifically how decision-makers cognitively grapple with new potential imaginaries or pathways.

Generating urban just transition pathways

Just transition has gained traction as shorthand for equity and inclusivity in climate action. Different conceptualisations have developed, sharing concern for different principles of justice, including fair allocation of resources (distributive justice), access to and involvement in decision-making (procedural justice) and acknowledgement of cultures and identities (recognition justice). Spatial, temporal and sectoral dimensions of change have also been highlighted (Hughes and Hoffmann, 2020), as well as different depths of change. We therefore understand just transition as operating across three axes (the ‘3D’ framework, Table 1): justice *domains*; *dimensions* of change; and transition *depth*.

Our approach to just transition highlights the numerous potential interpretations possible across different points on these axes. It has remained a relatively unstructured policy problem (Hoppe, 2018). That is, there is uncertainty around relevant knowledge, and variable agreement on values, norms and goals.

This leads us to ask, how is a concept like just transition translated into policy? This has been relatively untouched in literature to date, and Hughes and Hoffmann (2020: 8) argue for more consideration of ‘agential dimensions of transition [and] the multiplicities of urban politics and governance’. A key concern is to interrogate possibilities for generating urban and regional just transition pathways and how strategies can be crafted within existing geographic and governance contexts.

There are no necessary conditions that makes urban governance more transformative than other governance configurations. However, (a) the largely settled nature of urban governmental resources, responsibilities and sometimes modest fiscal powers, (b) important intermediation roles within multi-level governance systems, geographically located within, (c) critical mass of infrastructural and social networks and (d) sense that urban institutions are closer to lived realities of citizens than national or international governing bodies, have made it a popular site of engagement for considering how transformative change might be achieved (While and Eadson, 2019).

Table 1. 3D just transition framework.

Domains of justice	Including <i>distributive</i> , <i>procedural</i> and <i>recognition</i> justice, sometimes also <i>restorative</i> and <i>cosmopolitan</i> justice
Dimensions of change	Implications of transition will vary between <i>places</i> , <i>scales</i> , <i>social groups</i> and <i>sectors</i> over time
Depth of transition	Extent of systemic change varies between interpretations and approaches to transition from sector-specific employment support to reconfiguration of democratic institutions and societal norms.

Yet urban governments face challenges to enact transformative policies even where there is appetite to do so, bound by prevailing governance norms, constraints within multi-level governance arrangements (Webb et al., 2016) and in many countries straitened resources following a prolonged period of fiscal retrenchment (Traill and Cumbers, 2022). Further, increasingly urban governance operates within an expanded field of climate action which includes individuals, sub-local collectives, translocal networks and private sector initiatives (Thompson, 2021; While and Eadson, 2019). The transboundary challenge of just transition also means action crosses multiple policy domains, which is challenging (Kuzemko, 2013). Capabilities to act are shaped by material resources and infrastructures (De Laurentis, 2020).

To summarise, while potential for transformative urban just transition pathways might exist this is highly contingent on context. This connects to two sets of literature adopting evolutionary approaches to social and economic change: socio-technical transitions and regional path development, whose overlaps have been outlined elsewhere (Chlebna et al., 2023; Trippel et al., 2020).

These literatures seek to understand conditions and mechanisms of change, highlighting the importance of understanding historic and geographic contexts. Both literatures are strong in examining technological bases for economic change. Cultural and cognitive factors are less established points of focus for understanding regional pathway formation or reformation in either literature (Weituschat et al., 2022). Yet understanding shared meanings and cognitive processes is essential to understanding how pathways are created, maintained, renewed or closed-down, and how agency is both exercised and perceived (Eadson and Van Veelen, 2023). Schuster et al. (2023) point to cultural challenges for developing a just transition pathway.

They argue for more policy focus on identity and shared visions for post-carbon industrial futures, alongside concern for jobs and technical innovation. Huggins and Thompson (2014: 730) highlight the importance of culture (shared meanings and beliefs) as ‘an element of the bounded rationality of places’. Some studies of path development for industrial regions also highlight cognitive and cultural barriers to change (Fløysand and Jakobsen, 2017).

While these studies provide description of cognitive factors in generating new or continuing old regional trajectories, they tend not to interrogate specific processes of cognitive path development or path dependency, nor give detailed accounts of individuals who are grappling with possible alternative pathways. This matters because to understand how dependencies manifest or shift it is important to understand the cognitive processes involved in producing them. Introducing new entities to individual and collective logics requires sensemaking (Weick, 1995), needing its own conceptualisation and analysis.

Sensemaking for urban just transition

Urban policy does not operate in an institutional void and policymaking is not an abstract process. It is produced through choices made by agential actors in context. Understanding how policy is made and enacted necessitates considering how those actors make sense of new challenges, and how they formulate ideas for action based on understanding of these challenges (Béland, 2009).

Opinions are products of cognitive processes shaped by lived experiences, mediated information (others’ opinions, different media sources, etc.) and attuned to specific moments and contexts. Weick

(1995: 3) describes sensemaking as a configuration of ‘identity, retrospect, enactment, social contact, ongoing events, cues, and plausibility’. Sensemaking therefore involves a process of translation through bringing together different heterogeneous elements to produce a new entity (Aaen et al., 2016). Through the study of citizens’ sensemaking of energy infrastructure developments, Aaen et al. (2016) emphasise how their research participants ‘actively enact their surroundings’ (p. 585). They draw on their experiences as individuals, and on subjective understanding of the geographic landscape around them ‘... to actively relate to both social and material entities ... in a translation process’ (Aaen et al., 2016).

Understanding sensemaking as involving bringing together of different entities is helpful for unpicking how sensemaking processes produce gaps between ‘what we know’ and ‘what we do’ (Dobson and Dempsey, 2021). Policymakers make their own interpretations of evidence and tie this together with what they view as being possible or expedient in the specific context: ‘evidence is both selected and interpreted to fit local circumstances’ (Dobson and Dempsey, 2021: 398). Similarly, Hoppe (2018: 392) writes about problem structuring for policy design. This involves formulating possibilities for action by reconfiguring ‘uncontrollable, unstructured or less structured policy problem types towards the politically “tamed” or structured ones’.

Although these translation processes confer a sense of openness, new information is translated through a prism of what we already think about the world, which is comprised of an accretion of previous translation processes mediated by experience. As well as literature on path dependency, literature dealing with ‘institutional logics’ (Thornton et al., 2012) has explored how individual practices are informed by ways of being and doing that build over time and become entrenched. These logics are not power-neutral. Ways of thinking are powerfully shaped by governmental discourses and practices which become embedded in day-to-day routines and operations. As demonstrated above, urban governance is situated within multi-level governance systems, which shape capabilities through conferring resources and responsibilities and through discursive logics designed to frame how sub-national governance actors think about and see the world.

Existing understanding therefore produces cognitive barriers or path dependencies. But these are tendencies, not absolutes. As Bevir et al. (2017) note: ‘the mere fact governing narratives evoke subjects to behave in particular ways does not in itself guarantee that “docile” subjects will comply’, or that they will not consider alternative options. Rather, individuals exercise situated agency (Bever and Rhodes, 2007). In this respect, individuals’ reference to existing understanding can also help forms of sensemaking that are more open to new entities. Aaen et al. (2016) write how their research participants engaged in ‘inclusive’ sensemaking where actors made sense of new, potentially threatening issues by linking them to their prior knowledge and understanding, rendering them more palatable.

A layered account of sensemaking

These different accounts of sensemaking show that people engage in interrelated translation processes to build the story of a situation. We add to this understanding through generating a layered analytical approach to sensemaking as a translation process. We segment this process into three phases:

1. Conceptualisation: understanding the meaning of the new entity (in our case, ‘just transition’) and its relation to what is already understood about the world, such as the way that Aaen et al.’s participants linked new entities to existing ways of seeing and understanding the world.
2. Contextualisation: relating new entities – and initial conceptualisation of them – to the world you inhabit. This also requires bringing into being publics and spatial territories on which to map conceptualisations. This is a central element of the art of politics: Who or what are you seeking to represent (Latour, 2003)?
3. Operationalisation: formulating responses to this new entity, for instance Dobson and Dempsey’s (2021) ‘logics of inaction’ for not acting on new evidence.

Through these processes, problems or concepts are ‘re-structured from problems as webs of “undesirable

situations” to problems as specific, time-and-space bound [entities]’ (Hoppe, 2018: 384). Each stage involves bringing together different entities for sense-making, including interplay between new information and existing understandings about the world. As noted, this coming together is not frictionless. Different ideas and information have to be assessed as part of the sensemaking process, potentially creating tensions. Reflecting power dynamics involved in sensemaking, some existing ideas or frames will carry more weight, reinforcing existing pathways (‘path enforcers’): for instance, existing governance regimes or embedded cultural tropes. Concurrently, a new concept or piece of information might allow different ways of thinking to emerge, including through drawing on existing understanding that might be recast in light of the new information (‘counterforces’). There is a dynamic interrelation between the three phases in our framework. Each phase influences the others, shaping possibilities for different ways of thinking.

This forms a framework for – and was iteratively informed by – our empirical analysis, below. We are interested in *prefigurative* sensemaking. That is, how elite policy actors consider a novel concept (just transition), place it within a specific urban context and imagine possibilities for action. Concern for prefigurative sensemaking is important for understanding how a novel concept is received in a particular setting, an important phase in the policymaking process. This has received little attention in relevant literatures on regional (green) path development and regional socio-technical transitions. As such, we provide a fresh perspective on how policymakers mediate potential for new development pathways.

Stakeholder sensemaking and urban just transitions

Context

This article draws from empirical investigation in South Yorkshire, England. South Yorkshire (2021 population, 1.4 million) encompasses Sheffield (England’s fifth most populous city) and the neighbouring smaller settlements of Barnsley, Doncaster and Rotherham. The region has a legacy of manufacturing and mining, its economic core until late 20th century. This legacy persists through longer term

structural economic challenges. Manufacturing and transport (industries more exposed to decarbonisation challenges) remain large employers in the region. Across the wider Yorkshire and Humber region, one-fifth of jobs are exposed to transition, of which half require reskilling to ensure they can transition (Robins et al., 2019). Politically, its industrial legacy is borne out in strong representation of the social-democratic Labour party.

In England, local and regional authorities have limited autonomy for revenue generation, provision of services or regulation over domains key to just transition, including public transport, housing and energy. From 2010 to 2024, regional governance comprised city-regional authorities called Local Enterprise Partnerships (LEPs), and from 2014 onwards Combined Authorities (CAs). LEPs were partnerships between policymakers and local businesses, tasked with supporting economic development, with funding devolved from central government through negotiated deals with individual LEPs. Since 2014, 10 metropolitan regions have also constituted CAs with some powers over transport, housing and planning through negotiated Devolution Deals. Subsequently nine of these – including South Yorkshire – have become Mayoral Combined Authorities (MCAs) with a directly elected mayor. All LEPs were to be absorbed into CAs by 2024.

Methods

The study investigated policymakers’ views on just transition and its implementation in South Yorkshire. Stakeholders were identified through analysing the composition of regional decision-making boards, and discussion with South Yorkshire MCA (SYMCA) policy professionals to identify influential stakeholders not represented on boards. A total of 40 potential participants were approached and 21 agreed to participate. These comprised six public sector representatives (three from SYMCA, three from local authorities), three politicians (one elected Labour, one non-elected Labour, one ceremonial non-partisan), seven private sector representatives (three Small and Medium Enterprises, three large companies, one business representative organisation), three civil society representatives (two from climate/sustainability groups, one

from a health organisation) and two education providers. The proportions from different sectors broadly matched representation on regional boards.

The research design focused on prefigurative sensemaking, aiming to explore how stakeholders understood just transition as a *potential* frame for action. Just transition was not part of formal regional policy discourse. As such, approaching just transition through prefigurative sensemaking was useful to conduct investigation into what regional just transition might look like.

We employed a mixed methods approach, utilising Q-methodology (Brown, 1980) which has been utilised to understand stakeholder policy development preferences (Black et al., 2019; Carr, 2019). It combines openness of qualitative methods with pattern identification through statistical analysis. The method is useful for exploring perspectives on unsettled problems like just transition, providing a structured activity for participants to deliberate and making choices and compromises about what viewpoints or actions they would prioritise over others. This was particularly useful for our intent to understand how policy stakeholders understand and prioritise ways of thinking about and acting on just transition. Briefly, the process involves providing participants with a set of statements (50 in our study) which they sort in response to an overarching question ('What is a just transition for South Yorkshire?'). We felt use of specific statements would help participants to articulate what they understood by just transition, which can be variously interpreted. It also accords with our conceptualisation of sensemaking as a process of bringing together and assessing different elements to produce a viewpoint. The sorting process uses a scale ranging from 'least like how I think' (−6) to 'most like how I think' (+6). Statistical factor analysis identifies patterns in responses. The results are briefly outlined below and detailed in Appendix 1. The sorting process and attendant statistical analysis were useful to identify difference and similarity between participants, as well as overarching trends.

The sorting exercise was combined with qualitative interviews (digitally recorded, professionally transcribed). The sorted statements prompted discussion around priorities for just transition for South Yorkshire. Statements were derived from existing literature on just transition, climate action and different models of

economic development for low-carbon transitions. These were sense-checked through a panel of academics and with three policy stakeholders at SYMCA who did not participate in the study. The policy stakeholders were asked to provide feedback focusing on whether terms and phrasing used in the statements were clear and would be readily understood by participants. Final decisions were made by the research team. The study was conducted in 2020–2021 during periods of COVID-19 restrictions. This necessitated research to be conducted remotely. Respondents were invited to complete the Q-sort before an interview (rather than during), with interviews providing space to reflect on choices. Qualitative data were coded and analysed using Nvivo 12 qualitative data software. Analysis was iterative, moving between empirical data and theory, as well as between respondents' different interpretations, and between the research team's respective interpretations. Initial qualitative analysis was conducted without reference to Q-step analysis to ensure statistical results did not influence interpretation of qualitative data. Quantitative analysis was then overlaid onto qualitative analysis to support further analysis and identification of commonalities and disjunctures between and within groups. Figure 1 summarises the research process. The data are by nature speculative, focusing on ideas and potential action rather than direct analysis of policy decisions. This to some extent limits analysis to 'what might be'. However, the intention of the study was precisely to understand how policy stakeholders interpret and operationalise a novel (to the region) concept, to provide insights into cognitive aspects of developing new policy.

Conceptualising just transition: 'inclusive growth plus net zero'

Q-sorts highlighted participants' initial thoughts on just transition principles. Statistical analysis identified different archetypes among participants. Three distinct views were identified in answer to the question: *What does a just transition look like for South Yorkshire?* Based on the differences between these groups, we labelled these archetypes as follows (see Appendix 1 for detail):

Economic growth and technological innovation (seven out of 17 participants, referred to as 'growth')

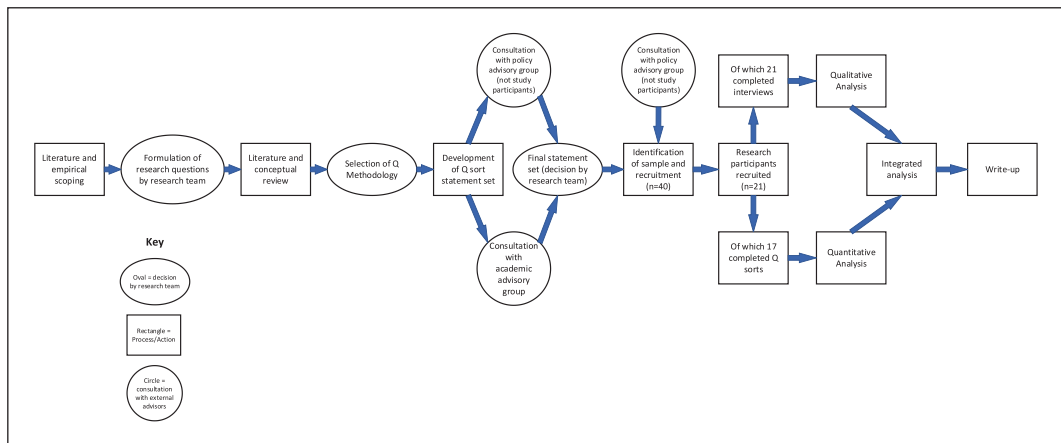


Figure 1. Summary of the research process.

below): this is a view of just transition as reliant on economic growth and technological innovation.

Infrastructure and education (six participants; ‘infrastructure’): this view holds that just transition requires rethinking development and more investment in education.

Solidarity and citizens-first (four participants; ‘solidarity’): this perspective holds that a just transition needs a common vision based on solidarity and putting people at the centre.

These archetypes show some differences between participants, especially a majority focused on just transition as aligned to economic development policy and a minority focused on citizen-focused action. Civil society (two out of three) and education (one out of two) representatives were most represented in ‘solidarity’, politicians were solely in ‘growth’, while local authority (two in each category) and private sector representatives (three in each) were mostly shared across ‘growth’ and ‘infrastructure’. This overview and majority consensus on economic development priorities foregrounds our qualitative findings.

Interviews explored whether participants had previously encountered the just transition concept and what it meant to them. It was novel to approximately one-third of participants while remaining respondents had limited knowledge of its meaning, origins or

application in policy. In most cases, participants were engaging in an initial sensemaking process.

A shared feeling among respondents in ‘growth’ and ‘infrastructure’ categories was that just transition required emphasis on economic growth. Through the Q-sort process, ‘growth’ respondents aligned with the statement ‘economic growth is more important than just transition’; ‘infrastructure’ respondents disagreed with the statement ‘a just transition means abandoning economic growth as a policy goal’. There was more variance among ‘solidarity’ participants, but – for example – the private sector representative in this group argued that economic growth should remain a priority:

We’ve got to continue to grow the economy and I firmly believe that we should be able to do that and bring in a zero carbon just transition at the same time. (SY006/Private sector – SME/Solidarity)

This viewpoint placed guiderails on what just transition should involve. For many participants, this involved linking just transition to a policy term which had become a guiding concept for recent policy in the region: ‘inclusive growth’, a fuzzy concept with its own critical literature (see Lee, 2019). ‘Just transition is about ensuring inclusive growth’ was a consensus statement across the sample. For many respondents, just transition became ‘inclusive growth plus net zero’.

Eight participants linked just transition to inclusive growth by referring to existing regional priorities, making sense of just transition as something they already do:

I wasn't familiar with the terminology just transition but I'm very familiar with the underlying objectives . . . because we've been involved for the last two years in formulating the strategic economic plan for the region and the objectives of that strategic economic plan are not growth at any cost, they are growth in an inclusive and sustainable way . . . So just transition is very much part of that. (SY021/SYMCA/N/A¹)

These respondents used an existing entity – the South Yorkshire Strategic Economic Plan (SEP) – to make sense of just transition and align it with their existing worldview. The SEP acted as reference point for other ideas, reflecting and reproducing cognitive frames to evaluate these ideas. The emphasis for these strategies is set by the UK government, who define the parameters for local and regional economic plans as follows:

Analysis of the main underlying competitive advantages and strengths of your area, as well as opportunities for strategic connections across regions

Opportunities for growth over the next 10 years, and your vision for what would happen if these opportunities were successfully grasped in this period (UK Government, 2023).

One respondent – an SYMCA board member with a private sector background – took this framing to view just transition not as 'inclusive growth plus net zero', but simply as a route to inclusive growth: 'I don't think it should include climate to start with. The just transition is how do we move a society from being unequal to being fairer and more inclusive' (SY005/SYMCA/Infrastructure).

These examples show how cognitive frames were shaped by development of a regional strategy which codified UK government guidance to prioritise economic growth and competitive advantage in local economic strategies. Potential just transition pathways were shaped from conceptualisation stage by

powerful discursive path dependencies centred on economic growth, reinforced by national guidance and translated to local frameworks for action. Inclusive growth provides a variation on this theme, as 'growth plus' (Crisp et al., 2024), showing how hegemonic political frames can be translated into something subtly different as they work through different levels of government. Several respondents argued that inclusive growth (or growth plus) was a radical departure from previous policy norms, while this has been critiqued elsewhere as working 'with the established economic model rather than presenting a substantive departure from existing practices' (Sissons et al., 2019: 436).

By tracing how participants conceptualised just transition, we see how it was interpreted through linking to known conceptual entities, including guiding logics and ideologies. It was translated into something that did not challenge existing worldviews, instead capturing existing beliefs and dominant paradigms. This aligns with Aaen et al.'s (2016) 'inclusive sense-making', allowing stakeholders to positively respond to the concept and explore its implications within their existing worldview (see also Westman et al., 2022). This also meant stakeholders generally did not explore more transformative understanding of just transition. Focus on inclusive growth implicitly centred just transition on distributive justice, seeking to ensure proceeds of (green) growth were shared across the region's inhabitants. Other aspects of justice, time-scales and more specific dimensions of change (geography, sectors, etc.) tended not to be mentioned at this stage in the translation process.

Contextualising urban just transition: constructing a regional imaginary

An important element of contextualisation for policy involves constructing publics and spatial territory in relation to the conceptualisation (Latour, 2003). In this instance, these publics and territory were constructed as 'South Yorkshire', a political entity which has formally existed (intermittently) since 1974, with its popular cultural identity tied to subsequent industrial decline. This construction shaped interpretations of different aspects of just transition as conceptualised in our 3D framework.

The first element of this territorial construction was representation of South Yorkshire as a site of injustice experienced through previous economic restructuring, also creating decarbonisation risks.

We can't pretend that there isn't still scarring of the last big transition that this area went through. I think the working population and the economy of Sheffield is still heavily scarred really by the transition away from heavy industry and coal in South Yorkshire into a more service-based economy. (SY007/Education/N/A)

South Yorkshire was brought into being by participants as a regional whole, with collective emotional 'scarring': South Yorkshire needed to ensure it did not continue to lose out compared to other places. This contextualisation meant just transition was first a question of distributional justice, in the context of territorial competition, and to some extent restorative justice for the region based on harms it had experienced over the last 50 years. For some, this context meant that just transition should prompt different ways of thinking about economic development, potentially opening up more transformative approaches:

It made me think about this region and our previous hunt for jobs at any cost and types of industries and sectors that we were encouraging into the city region. (SY019/Civil society – Health/Solidarity)

Even so this context was employed to justify continued need to promote existing models of economic growth for the region:

I'm sure there is a win-win strategy for this and I think it's important given where this city region is in comparison to some of its peers around the country that we do need, we need to continue seeking investment, we need to continuously think about bringing more high value jobs in. (SY019/Civil society – Health/Solidarity)

Focus on industrial past was also seen as a limiting factor, meaning different economic futures were marginalised. As one respondent put it, 'there's a bit of a fixation around manufacturing in South Yorkshire sometimes' (SY016/Local and regional government/N/A). The industrial history and sense

of loss in the region created cognitive path dependencies for considering just transition, which in these dialogues interacted with and reinforced dominant growth discourses outlined above. This resolved in a focus on revitalising the region's industrial base to achieve positive change. This acted as a reinforcing narrative to embed incremental change centred on specific forms of economic activity.

Construction of a regional whole as a site of justice also had the effect of reducing discussion of difference within the region, an important aspect of recognition justice. Just transition literature has focused on the importance of place identity and the lived experiences of citizens. For instance, there has been interest in how economic processes entwine with local identities, focusing on how change is anticipated, experienced and lived with in places (Olson-Hazboun, 2018). Regional historical narratives were important for how just transition was translated into something contextually meaningful by our participants. Yet no mention was made by participants of the region as a point of shared or differentiated social identity despite this collective history, which reinforced the 'regional problem' as an economic problem. The region was largely characterised as an economic territory threatened by external forces, losing out in competition with other places.

Feola et al. (2023: 3) note that, 'the existence and mobilization of collective memories of the past . . . are a core aspect of the politics of place framing fundamental to the socio-material processes of sustainability transitions and transformation'. In this way, we can see how cognitive processes of path development are tied to memory, perceived historic identity and shared representation of a constructed place (South Yorkshire). This is not simply about cognitive path dependency but of how historical narratives can frame understanding of present and future possibilities. This distinction is important because a story of industry and loss does not determine ways of operating but acts as a powerful framing for different choices. In theory, it is possible that such a framing could provoke radical transformative action.

However, with these participants, contextualisation of industry and loss tended to move towards abstract measures like 'economy', 'jobs' and 'skills' rather than lived experiences. This constrained just

transition to a narrow set of dimensions. This is influenced by how City Regions' roles have been framed in England, as entities to promote growth. This narrative highlights how conceptualisation of just transition interacts with contextualisation. While perceived injustice and decline might prompt stakeholders to consider decarbonisation as an opportunity for transformative change away from economic paradigms which have not brought prosperity for the last 50 years, dominant conceptualisations narrowed perceived available pathways to incremental change and specific region-wide understandings of distributional justice. In this way, conceptualisation shaped possibilities for contextualisation.

This analysis is not intended as wholesale critique of policymakers' contextualisation but a recognition of limits to cognitive capacity which encourages dependence on heuristics to contextualise decisions (Cairney and Kwiatkowski, 2017). And, as Latour (2003) argues, constructing notions of wholeness are necessary for politics and policymaking. But the nature of these abstractions – tying physical and emotional 'scarring' to abstract economic conceptions like 'Gross Value Added' – produced a modality that problematised just transition as something to be managed through tweaks to existing policy norms.

Operationalising urban just transition: urgency justifies business-as-usual

The third element in our sensemaking process is operationalisation, partly promoted by asking participants to consider how to achieve just transition

for South Yorkshire. In other scenarios, this might be a natural part of a policy process (Hoppe, 2018).

Reinforcing conceptualisation and contextualisation, participants advocated investment and coordination to stimulate infrastructure, jobs and skills: the existing repertoire for regional policymaking. Participants discussed ensuring such investments were inclusive, again foregrounding distributional justice. They were also prompted to talk about institutional arrangements and democratic engagement for just transition (addressing procedural justice). Examination of Q-sorts showed the majority did not prioritise increased citizen or civil society participation in decision-making for just transition (Table 2).

This negative attitude to citizen participation was interrogated in interviews. Some respondents from growth and infrastructure archetypes did suggest improved consultation with citizens and communities would build legitimacy of actions; others talked about necessity of communication and education to inform citizens about relevant issues. But, reinforcing Q-sort findings, most respondents cautioned against major changes to institutional arrangements. One respondent encapsulated this worldview:

You can't impose change, you can't force people to change and you certainly can't force them to address the difficult questions on the grounds that it's probably good for them but they've had no engagement . . . [But] I think the extent you can really mobilise mass support is slightly less than we think . . . it might be that you settle for assent rather than engagement. (SY017/Education/Solidarity)

Table 2. Q-sort responses to statements relating to participation.

Statement	Growth archetype	Infrastructure archetype	Solidarity archetype
Just transition means making policy decision-making more democratic	Negative (−3 ^a)	Neutral (0)	Neutral (0)
Just transition needs a people's assembly to drive decision-making	Negative (−5)	Negative (−5)	Positive (+2)
Just transition should be led by civil society and communities	Negative (−2)	Negative (−1)	Positive (+1)
Trade unions should be closely involved in decision-making	Negative (−3)	Negative (−2)	Negative (−2)

^aZ-score included in brackets (details provided in Appendix 1).

Participants gave two reasons for this conservative approach. First, they saw decarbonisation as urgent, without time to reconfigure institutions or conduct participatory decision-making exercises, reflecting others' concern for the 'urgency versus deliberation' dilemma in climate action (Kumar, 2022). For these participants, urgency overrode claims for strengthening procedural justice, aligning with contextualisation of the regional whole which downplayed difference, and therefore the importance of incorporating different voices into decision-making.

Second, most stakeholders saw participatory action as inefficient and ineffective: 'I think citizens' engagement and decision making on this has a very limited potential' (SY005 / SYMCA / Infrastructure). Building from conceptualisation of just transition as 'growth plus plus' and contextualisation of the regional whole, they felt local and regional bodies working with industry were well placed to enact change.

Several participants shifted from emphasising the importance of participation when conceptualising just transition to downplaying transformative change when working this through to operationalisation. Embedding concepts within context, and then practice, induced cognitive shifts as they placed the concept alongside their understanding of the region and its institutional apparatus. This finding points to the value of this layered analytical process for unpicking how policy imaginaries are shaped, providing points of challenge and opportunity for enacting strategies to produce more transformative imaginaries.

Some respondents did raise the prospect of more transformative approaches to participation, sensing that low-carbon transition was 'fundamentally different' (SY001/Politician/Growth) to other challenges faced in the last century, and that top-down solutions might create resentment and resistance to change. They highlighted regional bodies' positions within wider systems of government, and the remit of organisations like SYMCA as barriers to transformative action.

... I think it's [SYMCA] been encouraged to look for technical solutions rather than how we actually change radically and quickly enough which is social solutions and it isn't really equipped to do that. (SY009 / Civil Society / Solidarity)

Arguing against this view of regional policy, two participants highlighted SYMCA's fuzzy constitutional status, which did not create many formal boundaries to action. Others pointed to high-profile leadership in other English City Regions like Manchester, Liverpool and West Midlands as pointers for how SYMCA could go further, including actions to support just transition in different ways (public transport being one example). The argument was that regional capabilities for change were not as predetermined as most participants expressed. Rather, other contextual factors in South Yorkshire led to more conservative approaches.

Some respondents thought reluctance for transformational change reflected composition of regional decision-making boards. For example, LEPs were designed as partnerships between business and public sector, which was reflected in how stakeholders thought about just transition. Some argued that existing institutional frameworks needed extending to include excluded voices, especially community and civil society representation, addressing procedural and recognition justice challenges:

There are organisations that are rooted in their communities that are able to access and engage with people with perhaps language barriers or whatever it might be in a really spectacularly effective way so they do clearly have a role around justice and inclusion. (SY010/Local and regional government/Growth)

In contrast, regional boards did not reflect the region's demographic diversity.

In summary, most participants followed conceptualisation and contextualisation of just transition as rooted in economic challenges and 'scarring' of the region to focus on economic dimensions of operationalising just transition to achieve assent for change, in each stage shaped by multi-level governance arrangements which reinforced such orientations. Procedural justice in decision-making for just transition was less prominent, although there was debate about this, including disagreement over SYMCA's role in enacting transformative change. The effect was further narrowing of incremental just transition. Some participants reflected that views were shaped by their own position in the system. Possibilities for action were shaped by institutional

practices which presided against transformational change. As such we saw tension whereby need for systemic change was acknowledged by some participants as necessary for just transition but cognitive dependencies mitigated against these changes. Adherence to existing governing practices met a counterforce emphasising urgency of action and was resolved to support continuation of existing institutional and procedural arrangements. A headline summary of the findings is provided in Table 3, showing key points of cognitive path reinforcement, counterforces, their resolution through sensemaking and how the layered approach to sensemaking reveals the role of different stages in the process in shaping eventual operationalisation.

Conclusion

Urban just transition is an unsettled concept being negotiated by different stakeholders with different interests. To investigate how this plays out in practice, this article combined conceptualisation of just transition as a politically constructed entity with a novel analytical framing for sensemaking. Through empirical focus on South Yorkshire, we respond to a broader call for studies that help us ‘understand more about tensions and dilemmas for policy implementation’ in decarbonisation for industrial regions (Jakobsen et al., 2022: 328). Our case study is singular but speaks to wider debates about urban and regional transition pathways, governance arrangements and sensemaking. It has implications for understanding just transition in the global north, and especially old industrial regions facing acute challenges to achieve decarbonisation goals alongside entrenched social and economic inequalities. The article makes five specific contributions to knowledge:

1. Drawing on sensemaking and related literature, our study and approach brought together popular evolutionary approaches to understanding ‘green’ regional restructuring with concepts that support illumination of the specificities of prefigurative cognitive processes in decision-making. This provides a novel contribution to literatures examining regional sustainability and economic pathways.
2. Our conceptual and analytical framework produced a novel approach to understanding sensemaking by introducing a multifaceted account of translation. Our analysis has demonstrated the utility of this approach for unpicking how policy stakeholders translated the concept of just transition. The three-fold approach also highlights interrelations between different aspects of sensemaking.
3. Our 3D framework for conceptualising just transition adds to existing literature on just transition by producing an operationalisable framework for understanding just transition as a capacious term open to varying interpretations. This also allows more concrete interrogation of just transition against normative goals for transformative climate action.
4. The empirical findings produce a first-of-a-kind analysis of policymakers’ perceptions of just transition as a challenge for urban and regional development, adding to the understanding of tensions and challenges faced in developing policy to meet multiple policy outcomes in regions with entrenched social, economic and environmental challenges.
5. Combining our conceptual, analytical and empirical contributions has generated new empirically informed understanding of possibilities for urban and regional just transitions, centring on cognitive and cultural challenges and opportunities therein.

Taking these contributions forward we see three sets of implications for theory and practice.

First, our findings highlight different points of tension within sensemaking processes, with implications for understanding how new regional pathways are generated. This builds from arguments by Westman and Castan Broto (2022) on how mainstream discourses are reproduced within languages of transformation by showing the cognitive processes by which this can happen. Each stage in our sensemaking framework introduced different elements of tension: conceptualisation foregrounded hegemonic governance discourses and their reinforcement through key regional texts; contextualisation spotlighted tensions between historic cultural understandings translated as

Table 3. Just transition sensemaking findings summary.

Sensemaking phase	Path enforcer	Counterforce	Resolution	Layering	Just transition
Conceptualisation	Multi-level governance discourse and practices promoting and embedding growth first paradigm.	Justice and inclusion via regional emphasis on 'inclusive growth'. Commitment to net zero.	Just transition = inclusive growth ('growth plus' variant) + net zero: 'Growth++'	N/A	Domains: distributive justice (through inclusive growth); Dimensions: broad economic concerns; Depth: incremental based on existing policy norms.
Contextualisation	Narrative of loss and scarring from previous rounds of economic restructuring. Region brought into being as abstract economic entity – focus on region-wide GVA, jobs, skills – in territorial competition against other regions. Existing governing practices/norms, reinforced by negotiated funding settlements and nature of LEP public-private partnership.	Understanding decarbonisation as engendering a new period of regional restructuring.	Region as largely homogeneous container for attracting 'low-carbon' jobs and GVA to prevent further regional scarring.	Conceptualisation as Growth++ shapes view of region and contextual framing around low-carbon jobs and skills.	Domains: distributional justice in context of historic injustices – implicit reference to restorative justice, recognition muted; Dimensions: economic – manufacturing sectors as focus and challenge; regional scale, long-term processes; Depth: incremental but some opening for more transformational development.
Operationalisation		Urgency of action. Fuzziness of MCA operational boundaries. Some debate over possibilities for more diverse voices.	Business as usual, with new performance metrics centring on 'Growth++'	Contextualisation leads to more abstract, region-wide solutions. Combined with operational norms these work against recognition of difference and deliberative engagement of citizen voices. Growth++ becomes central framing for solutions.	Domains: abstracted distributional justice (specifically jobs and skills for workers) overrides concern for procedural or other justice domains; Dimensions: time – urgency of shift overrides procedural justice; Depth: urgency leads to further narrowing of incremental changes around specific policy challenges.

a ‘regional public’ against a counterforce that engendered different challenges brought by decarbonisation goals; and operationalisation highlighted dilemmas between urgency of action against deliberative governance. For each, entrenched cultural and cognitive norms acted as path enforcers but were moderated by new considerations of challenges posed by possibilities for just transition. These counterforces mostly led to resolutions reinforcing existing pathways.

Our triadic framing of sensemaking highlighted how different phases interact, sometimes creating disjunction between conceptual and operational views. For instance, we saw how some participants conceptualised just transition as transformative and how this became moderated as they contextualised then operationalised the concept. There was a process of translation as participants moved from theory to practice, each stage bringing ideas into dialogue with perceived realities and limits to action. Invoking a regional whole to contextualise just transition was part of this process. Homogenising the region subdued perceived need for democratic input. Referring to our 3D framework, through these sensemaking processes just transition became limited to relatively narrow framings of distributive justice, within economic dimensions (manufacturing sectors, focus on jobs and skills), considered at the regional scale and through enacting incremental change.

Second, these findings spotlight the cultural politics of decarbonisation and how culture, economy and politics enmesh through regional imaginaries that shape the perceived art of the possible. Our findings partly align with Fløysand and Jakobsen (2017), who highlight the need for ‘cognitive renewal’ for green – and in our case ‘just’ – pathways in industrial regions. We further caution against uncritically viewing urban and regional territories as fertile ground for transformative approaches to ecological and social crises, and emphasise the interplay of path-dependent and more ‘path-contingent’ (Hudson, 2005) processes in shaping possibilities for change.

Third, following from the above, while our findings partly reinforce literature on path dependencies that resist alternative framings, it is also instructive to return to Latour (2003), who notes

the necessity of constructing seemingly coherent wholes to achieve change, but also the impossibility of these wholes holding. These ‘distorted realities’ (Latour, 2003) are a necessary function of policymaking and the challenge is to find ways to introduce new frames to adjust these realities. Our sensemaking approach introduces three potential openings: introducing new concepts to open new conceptual imaginaries; new geographical imaginaries to produce new contextual framings; and new institutional imaginaries to support new operational possibilities. Introducing additional phases of deliberative discussion between participants to share different views, and to introduce ‘outsider’ voices, could further open debate towards transformational possibilities. Limitations enforced by COVID-19 and changing institutional structures within SYMCA prevented the research from continuing further to test these possibilities. Finally, the study focused on sensemaking for potential just transition policy, rather than following decision-making for a planned policy programme. This reflected the position of just transition within the region. This does pose some limits on extrapolating our findings to likely action. Nonetheless, the findings provide insights into how policy stakeholders approach incorporating new concepts into existing governance arrangements, and more specifically into just transition as a policy concept.

In summary, this research emphasises the continued need to address cognitive and cultural factors within urban and regional decision-making and to place these within the context of the politics of transformational change. Our findings produce points of caution but also begin to explore potential openings within cognitive framings that can open new debates and ways of doing.

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Note

1. N/A refers to interviewees that did not complete the Q-sort so were not categorised into an archetype.

References

- Aaen SB, Kenndrup S and Lyhne I (2016) Beyond public acceptance of energy infrastructure: how citizens make sense and form reactions by enacting networks of entities in infrastructure development. *Energy Policy* 96: 576–586.
- Béland D (2009) Ideas, institutions, and policy change. *Journal of European Public Policy* 16(5): 701–718.
- Bevir M, McKee K and Matthews P (2017) *Decentring Urban Governance: Narratives, Resistance and Contestation*. Abingdon: Routledge.
- Bevir M and Rhodes RAW (2007) Interpretation and its others. *Australian Journal of Political Science* 40(2): 169–187.
- Black JE, Kopke K and O'Mahony C (2019) Towards a circular economy: using stakeholder subjectivity to identify priorities, consensus, and conflict in the Irish EPS/XPS market. *Sustainability* 11(23): 6834.
- Brown SR (1980) *Political Subjectivity: Applications of Q Methodology in Political Science*. New Haven, CT: Yale University Press.
- Cairney P and Kwiatkowski R (2017) How to communicate effectively with policymakers: combine insights from psychology and policy studies. *Palgrave Communications* 3: 37.
- Carr LM (2019) Seeking stakeholder consensus within Ireland's conflicted salmon aquaculture space. *Marine Policy* 99: 201–212.
- Chlebna C, Martin H and Mattes J (2023) Grasping transformative regional development – Exploring intersections between industrial paths and sustainability transitions. *Environment and Planning A: Economy and Space* 55(1): 222–234.
- Crisp R, Waite D, Green A, Hughes C, Lupton R, Mackinnon D and Pike A (2024) 'Beyond GDP' in cities: assessing alternative approaches to urban economic development. *Urban Studies* 61(7): 1209–1229.
- Dobson J and Dempsey N (2021) Known but not done: how logics of inaction limit the benefits of urban green spaces. *Landscape Research* 46(3): 390–402.
- Eadson W and Van Veelen B (2023) Green and just regional path development. *Regional Studies Regional Science* 10(1): 218–233.
- Eadson W, Van Veelen B and Backius S (2023) Decarbonising industry: a places-of-work research agenda. *Extractive Industries and Society* 15: 101307.
- Feola G, Goodman MK, Suzunaga J and Soler J (2023) Collective memories, place-framing and the politics of imaginary futures in sustainability transitions and transformation. *Geoforum* 138: 103668.
- Fløysand A and Jakobsen S-E (2017) Industrial renewal: narratives in play in the development of Green technologies in the Norwegian salmon farming industry. *Geographical Journal* 183(2): 140–151.
- Garvey A, Norman JB, Büchs M and Barrett J (2022) A 'spatially just' transition? A critical review of regional equity in decarbonisation pathways. *Energy Research & Social Science* 88: 102630.
- Hoppe R (2018) Heuristics for practitioners of policy design: rules-of-thumb for structuring unstructured problems. *Public Policy and Administration* 33(4): 384–408.
- Hudson R (2005) Rethinking change in old industrial regions: reflecting on the experiences of North East England. *Environment and Planning A* 37(4): 581–596.
- Huggins R and Thompson P (2014) Culture, entrepreneurship and uneven development: a spatial analysis. *Entrepreneurship and Regional Development* 26(9–10): 726–752.
- Hughes S and Hoffmann M (2020) Just urban transitions: toward a research agenda. *Wiley Interdisciplinary Reviews: Climate Change* 11(3): e640.
- Jakobsen S, Uyarra E, Njøs R and Fløysand A (2022) Policy action for green restructuring in specialized industrial regions. *European Urban and Regional Studies* 29: 312–331.
- Kumar A (2022) Energy geographies in/of the Anthropocene: where now? *Geography Compass* 16: e12659

- Kuzemko C (2013) *The Energy Security-Climate Nexus: Institutional Change in the UK and Beyond*. New York: Springer.
- Latour B (2003) What if we talked politics a little? *Contemporary Political Theory* 2: 143–164.
- Laurentis C (2020) Mediating the form and direction of regional sustainable development: the role of the state in renewable energy deployment in selected regions. *European Urban and Regional Studies* 27: 303–317.
- Lee N (2019) Inclusive growth in cities: a sympathetic critique. *Regional Studies* 53(3): 424–434.
- Olson-Hazboun (2018) Why are we being punished and they are being rewarded? Views on renewable energy in fossil fuels-based communities of the U.S. west. *Extractive Industries and Society* 5(3): 366–374.
- Robins N, Gouldson A, Irwin W and Sudmant A (2019) Investing in a just transition in the UK: how investors can integrate social impact and place-based financing into climate strategies. London School of Economics, London. Available at: https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2019/02/Investing-in-a-just-transition-in-the-UK_Full-policy-report_40pp-2.pdf
- Schuster A, Zoll M, Otto IM and Stölzel F (2023) The unjust just transition? Exploring different dimensions of justice in the lignite regions of Lusatia, Easter Greater Poland, and Gorj. *Energy Research & Social Science* 104: 103227.
- Sissons P, Green AE and Broughton K (2019) Inclusive growth in English cities: mainstreamed or sidelined? *Regional Studies* 53(3): 435–446.
- Thompson M (2021) What's so new about New Municipalism. *Progress in Human Geography* 45(2): 317–342.
- Thornton PH, Ocasio W and Lounsbury M (2012) *The Institutional Logics Perspective: A New Approach to Culture, Structure, and Process*. Oxford: Oxford University Press.
- Traill H and Cumbers A (2022) The state of municipal energy transitions: multi-scalar constraints and enablers of Europe's post-carbon energy ambitions. *European Urban and Regional Studies* 30: 93–106.
- Trippl M, Baumgartinger-Seiringer S, Frangenheim A, Isaksen A and Rypestøl JO (2020) Unravelling green regional industrial path development: regional pre-conditions, asset modification and agency. *Geoforum* 111: 189–197.
- UK Government (2023) Guidance for local authorities delivering business representation and local economic planning functions. Available at: <https://www.gov.uk/government/publications/guidance-for-local-authorities-delivering-business-representation-and-local-economic-planning-functions>
- United Nations Framework Convention on Climate Change (UNFCCC) (2016) *Just Transition of the Workforce, and the Creation of Decent Work and Quality Jobs*. Geneva: UNFCCC.
- Webb J, Hawkey D and Tingey M (2016) Governing cities for sustainable energy: the UK case. *Cities* 54: 28–25.
- Weick KE (1995) *Sensemaking in Organizations*. Thousand Oaks, CA: Sage.
- Weituschat CS, Pascucci S, Valentina Materia VC, Tamas P, De Jong R and Trienekens J (2022) Goal frames and sustainability transitions: how cognitive lock-ins can impede crop diversification. *Sustainability Science* 17: 2203–2219.
- Westman L and Castan Broto V (2022) Urban transformations to keep all the same: the power of ivy discourses. *Antipode* 54(4): 1320–1343.
- While A and Eadson W (2019) Households-in-place: socio-spatial (dis)advantage in energy-carbon restructuring. *European Planning Studies* 27(8): 1626–1645.
- While A and Eadson W (2022) Zero carbon as economic restructuring: spatial divisions of labour and just transition. *New Political Economy* 27(3): 385–402.

Appendix I

Q-sort method and results

Participants received a link to a website (Q-TIP) where they could arrange the statements for the Q study.

Q-TIP generated a random URL for each participant; researchers sent each participant their unique link. Participants did not need to register or log into Q-TIP to complete their sort.

When participants opened their unique link, at the top of the page they saw a 'stack' of statements the researchers were asking them to sort. They also saw empty spaces in pre-set columns below. Their task was to click each statement and drag it to a spot.

The columns were laid out on an axis from 'least like how I think' to 'most like how I think'.

Participants could move statement cards between columns as long as there was space in the target column.

If the target column was full, they could move the statement card back to the stack and open up space in the desired column by moving its statement cards around.

After they placed all the statement cards from ‘least like I think’ to ‘most like I think’, they could click ‘Save and Exit’ and safely close their browser window. Their input (but no identifying information) was recorded in a secure database accessible only to the researchers. These data were then exported as .csv files for its analysis.

The data analysis process using KADE, a desktop application for the analysis of Q-methodology data, was comprised of four steps:

1. Data input from the Q-sorts of all 17 participants in the Q study.
2. Factor extraction using the Centroid method.
3. Selection of three factors for rotation.
4. Application of Varimax rotation to maximise the variance shared among items.

The output KADE provided after using these statistical techniques included distinguishing statements for each factor and consensus statements. It also showed three composite Q-sorts which represent distinct views on the topic of interest.

The three distinct views on Just Transitions that emerged from the composite Q-sorts were classified as answers to the question: What does a just transition look like for Sheffield City Region? We used the term ‘Sheffield City Region’ in the Q-sort as the SYMCA was in the process of changing its name from Sheffield City Region to SYMCA. Based on the composite Q-sorts from the participants’ responses, the different views that emerged were:

- Leading through investing in infrastructure and education.
- A growing economy and technological innovation.
- Solidarity and putting people at the centre.

Leading through investing in infrastructure and education

Composite Q-sort:

Composite Q sort for Factor 1

-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
Just transition should not be a priority for the City Region	A just transition needs a people's assembly to drive decision-making	Sheffield City Region is less important than other places when it comes to implementing just transition	A just transition depends on international agreements	* ** ◀ In order to achieve change a just transition needs to focus on a manageable number of clearly defined	A just transition needs to be place-based	Spatial planning is important to just transition for Sheffield City Region	A just transition needs to focus on innovation-led economic development	* ▶ Sheffield City Region should produce and adopt a just transition strategy to guide its investment and	Just transition is about changing how we think about work and jobs	A just transition is urgent and needs to prioritise people's wellbeing	* ▶ A just transition means radically rethinking economic development and planning	Just transition needs to account for the rights of future generations
	** ◀ Ensuring economic growth is more important than a just transition	A just transition should take decades to give people time to adapt	* ◀ A just transition is about safeguarding jobs	Just transition is about employing corporate social responsibility principles	Just transition should be led by civil society and communities	Just transition means protecting housing and businesses in areas prone to flooding	A just transition means putting the region's ecosystems first	City Regions should take a lead on enacting just transition principles	A just transition means investing in low carbon infrastructure	* ▶ Just transition means investment in education	Just transition is about ensuring inclusive growth	
		* ◀ A just transition needs to be business led	** ◀ A just transition needs to account for the rights of non-human animals	Realising a just transition inevitably means conflict between different groups in society	Sheffield City Region will need new powers to successfully achieve a just transition	The region's anchor institutions (e.g. hospitals, universities) will be central to a just	Just transition for Sheffield City Region should prioritise improving housing stock for people	A just transition should centre on the foundational economy (the activities that sustain urban	A just transition is a vehicle for creating jobs in Sheffield City Region	A just transition is urgent and needs to prioritise the environment		
	* ▶ A just transition means abandoning economic growth as a policy goal	Just transition will require implementing a Universal Basic Income so that everyone has sufficient income to meet	Just transition means Trade Unions should be closely involved in decision-making	Just transition means prioritising some places in the City Region over others	A just transition means making policy decision-making more democratic	The perspective of those who are more affected by a transition is very important	* ** ◀ Just transition requires placing more value on care and domestic work	* ▶ Just transition requires placing more value on care and domestic work	Just transition principles should be the guiding principles for all the City Region's activity	Just transition means changing how we think about education, training and skills		
				We can't implement a just transition in Sheffield City Region without addressing exploitation of	* ▶ A just transition is not possible within existing political structures	* A just transition means promoting social solidarity and culture in Sheffield City Region	* ▶ Just transition for Sheffield City Region needs a step-change in public transport accessibility	Just transition will require specific policies to promote gender and racial equality				
					* ◀ A just transition is only possible with a strong growing economy	Just transition requires technological innovation	* ◀ A just transition is only possible if there's a shared vision for the future					

Legend

- * Distinguishing statement at $P < 0.05$
- ** Distinguishing statement at $P < 0.01$
- ▶ z-Score for the statement is higher than in all other factors
- ◀ z-Score for the statement is lower than in all other factors
- Consensus Statements

This way of understanding a Just Transition for the region holds that Just Transition principles should guide South Yorkshire and that this requires rethinking development and more investment in education.

Distinguishing statements:

- A just transition means radically rethinking economic development and planning / 5
- Just transition means investment in education / 4
- Just transition principles should be the guiding principles for all the region's activity / 3
- South Yorkshire should produce and adopt a just transition strategy to guide its investment and policy decision-making / 2
- Just transition requires placing more value on care and domestic work / 2
- The perspective of those who are more affected by a transition is very important / 1
- Just transition for South Yorkshire needs a step-change in public transport accessibility and use / 1
- A just transition is only possible if there's a shared vision for the future / 1

A just transition means promoting social solidarity and culture in South Yorkshire / 0

Just transition means prioritising some places in the region over others / -1

A just transition is not possible within existing political structures / -1

A just transition is only possible with a strong, growing economy / -1

In order to achieve change, a just transition needs to focus on a manageable number of clearly defined policy objectives / -2

Just transition is about safeguarding jobs / -3

A just transition needs to account for the rights of non-human animals / -3

A just transition needs to be business led / -4

A just transition means abandoning economic growth as a policy goal / -4

Ensuring economic growth is more important than a just transition / -5

A growing economy and technological innovation

Composite Q-sort:

Composite Q sort for Factor 2

-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
A just transition means abandoning economic growth as a policy goal	A just transition needs a people's assembly to drive decision-making	A just transition is not possible within existing political structures	A just transition should take decades to give people time to adapt	Just transition should be led by civil society and communities	A just transition means putting the region's ecosystems first	Just transition will require specific policies to promote gender and racial equality	* Just transition means investment in education	Just transition means changing how we think about education, training and skills	A just transition is a vehicle for creating jobs in Sheffield City Region	Just transition is about ensuring inclusive growth	Just transition needs to account for the rights of future generations	**► A just transition is only possible with a strong, growing economy
	Just transition should not be a priority for the City Region	We can't implement a just transition in Sheffield City Region without addressing exploitation of	**◄ Just transition means prioritising some places in the City Region over others	A just transition depends on international agreements	**◄ A just transition should centre on the foundational economy (the activities that sustain urban	**◄ A just transition is urgent and needs to prioritise the environment	**► A just transition needs to be business led	A just transition means investing in low carbon infrastructure	The perspective of those who are more affected by a transition is very important	**► A just transition needs to focus on innovation-led economic development	* A just transition means radically rethinking economic development and planning	
		Just transition will require implementing a Universal Basic Income so that everyone has sufficient income to meet	**◄ A just transition means making policy decision-making more democratic	Just transition for Sheffield City Region needs a step-change in public transport accessibility	A just transition needs to be place-based	Just transition is about safeguarding jobs	City Regions should take a lead on enacting just transition principles	Just transition for Sheffield City Region should prioritise improving housing stock for people	**► Ensuring economic growth is more important than a just transition	**► Just transition requires technological innovation		
	Sheffield City Region is less important than other places when it comes to implementing just transition	Just transition means Trade Unions should be closely involved in decision-making	**◄ Sheffield City Region should produce and adopt a just transition strategy to guide its investment and	Realising a just transition inevitably means conflict between different groups in society	* Just transition requires placing more value on care and domestic work	**◄ A just transition is urgent and needs to prioritise people's wellbeing	**► The region's anchor institutions (e.g. hospitals, universities) will be central to a just	In order to achieve change a just transition needs to focus on a manageable number of clearly defined	** A just transition is only possible if there's a shared vision for the future			
			**◄ A just transition means promoting social solidarity and culture in Sheffield City Region	A just transition needs to account for the rights of non-human animals	Spatial planning is important to just transition for Sheffield City Region	Just transition is about employing corporate social responsibility principles	Just transition is about changing how we think about work and jobs					
				Sheffield City Region will need new powers to successfully achieve a just transition	Just transition means protecting housing and businesses in areas prone to flooding	Just transition principles should be the guiding principles for all the City Region's activity						

Legend

- * Distinguishing statement at $P < 0.05$
- ** Distinguishing statement at $P < 0.01$
- z-Score for the statement is higher than in all other factors
- ◄ z-Score for the statement is lower than in all other factors
- Consensus Statements

This is a view of Just Transition as reliant on economic growth and technological innovation.

Distinguishing statements:

A just transition is only possible with a strong, growing economy / 6

A just transition means radically rethinking economic development and planning / 5

A just transition needs to focus on innovation-led economic development / 4

Just transition requires technological innovation / 4

A just transition is only possible if there's a shared vision for the future / 4

Ensuring economic growth is more important than a just transition / 3

The region's anchor institutions (e.g. hospitals, universities) will be central to a just transition for South Yorkshire / 2

Just transition means investment in education / 1

A just transition needs to be business led / 1

A just transition is urgent and needs to prioritise people's wellbeing / 1

A just transition is urgent and needs to prioritise the environment / 0

Just transition requires placing more value on care and domestic work / 0

A just transition should centre on the foundational economy (the activities that sustain urban life like utilities, public transport, care, education, food provision) / -1

South Yorkshire should produce and adopt a just transition strategy to guide its investment and policy decision-making / -2

A just transition means promoting social solidarity and culture in South Yorkshire / -2

Just transition means prioritising some places in the region over others / -3

A just transition means making policy decision-making more democratic / -3

Solidarity and putting people at the centre

Composite Q-sort:

Composite Q sort for Factor 3

-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
A just transition means abandoning economic growth as a policy goal	A just transition should take decades to give people time to adapt	***◀ Spatial planning is important to just transition for Sheffield City Region	* A just transition needs to be business led	A just transition needs to be place-based	Just transition is about employing corporate social responsibility principles	Just transition will require specific policies to promote gender and racial equality	A just transition needs to focus on innovation-led economic development	▶ A just transition means promoting social solidarity and culture in Sheffield City Region	Just transition is about ensuring inclusive growth	A just transition is urgent and needs to prioritise people's wellbeing	Just transition needs to account for the rights of future generations	***▶ A just transition is only possible if there's a shared vision for the future
	Just transition should not be a priority for the City Region	A just transition is not possible within existing political structures	***◀ Just transition requires placing more value on care and domestic work	We can't implement a just transition in Sheffield City Region without addressing exploitation of	***◀ Just transition means investment in education	A just transition means making policy decision-making more democratic	Just transition principles should be the guiding principles for all the City Region's activity	A just transition should centre on the foundational economy (the activities that sustain urban	Just transition for Sheffield City Region should prioritise improving housing stock for people	In order to achieve change a just transition needs to focus on a manageable number of clearly defined	A just transition is urgent and needs to prioritise the environment	
		***◀ Sheffield City Region will need new powers to successfully achieve a just transition	A just transition depends on international agreements	Just transition means protecting housing and businesses in areas prone to flooding	Just transition is about safeguarding jobs	* Sheffield City Region should produce and adopt a just transition strategy to guide its investment and	***◀ A just transition is a vehicle for creating jobs in Sheffield City Region	***◀ A just transition means radically rethinking economic development and planning	Just transition means changing how we think about education, training and skills	The perspective of those who are more affected by a transition is very important		
	Sheffield City Region is less important than other places when it comes to implementing just transition	Just transition will require implementing a Universal Basic Income so that everyone has sufficient income to meet	** Ensuring economic growth is more important than a just transition	Just transition for Sheffield City Region needs a step-change in public transport accessibility	Just transition should be led by civil society and communities	A just transition should be led by civil society and communities	Just transition should be led by civil society and communities	Just transition means prioritising some places in the City Region over others	Just transition is about changing how we think about work and jobs	City Regions should take a lead on enacting just transition principles		
			Just transition means Trade Unions should be closely involved in decision-making	Just transition requires technological innovation	***◀ A just transition means investing in low carbon infrastructure	A just transition means putting the region's ecosystems first	***▶ A just transition needs a people's assembly to drive decision-making					
				Realising a just transition inevitably means conflict between different groups in society	The region's anchor institutions (e.g. hospitals, universities) will be central to a just	* A just transition is only possible with a strong, growing economy						

Legend

- * Distinguishing statement at $P < 0.05$
- ** Distinguishing statement at $P < 0.01$
- ▶ z-Score for the statement is higher than in all other factors
- ◀ z-Score for the statement is lower than in all other factors
- Consensus Statements

This perspective holds that a Just Transition needs a common vision based on solidarity and putting people at the centre.

Distinguishing statements:

A just transition is only possible if there's a shared vision for the future / 6

A just transition means promoting social solidarity and culture in South Yorkshire / 2

A just transition means radically rethinking economic development and planning / 2

Just transition means prioritising some places in the region over others / 2

A just transition needs a people's assembly to drive decision-making / 2

A just transition is a vehicle for creating jobs in South Yorkshire / 1

A just transition is only possible with a strong, growing economy / 1

South Yorkshire should produce and adopt a just transition strategy to guide its investment and policy decision-making / 0

A just transition means investing in low-carbon infrastructure / 0

Just transition means investment in education / -1

Ensuring economic growth is more important than a just transition / -2

A just transition needs to be business led / -3

Just transition requires placing more value on care and domestic work / -3

Spatial planning is important to just transition for South Yorkshire / -4

South Yorkshire will need new powers to successfully achieve a just transition / -4