

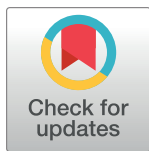
OPINION

How accounting for relational power dynamics can help tackle injustices in the climate crisis

Camilla Seeland^{1*}, Chris Foulds², David Arkell³

1 Global Sustainability Institute & Faculty of Business & Law, Anglia Ruskin University, Cambridge, United Kingdom, **2** Global Sustainability Institute, Anglia Ruskin University, Cambridge, United Kingdom, **3** Faculty of Business & Law, Anglia Ruskin University, Cambridge, United Kingdom

* crs142@pgr.aru.ac.uk



Introduction: Why power matters in pursuing just low-carbon energy transitions

It is widely understood that there is an urgent need to address the climate crisis. Climate change impacts are already being experienced and will only become more significant in the coming decades. Notably, impacts will be most strongly felt by those already marginalised or vulnerable within societies [1]. However, in addressing the climate crisis, there is a risk in creating new or exacerbating existing injustices—especially if rapid and deep transitions are to be targeted [2]. Thus, we strongly assert that researchers have a responsibility to remain mindful of and actively seek to mitigate, climate-related injustices. Through this opinion piece, we present the critical consideration of *power*, as an underutilised means for researchers (and others) to do just that. Power plays a fundamental role in addressing the climate crisis and pursuing a just low-carbon transition because of how “power creates barriers to justice” [3, p.32].

We suggest it is useful to begin by thinking of power in terms of three types. First, ‘power over’ refers to the ability of certain actors to exercise power over others as an act of domination or oppression [4, p.429]. For example, National Governments dictating how climate change is addressed at the Local Government level. Second, ‘power to’ refers to the ability of actors to influence or resist certain outcomes [4, p.429]. For example, Local Governments being able to lobby, influence, and push back on policies and decisions proposed by National Governments. Third, ‘power within’ refers to the asymmetrical institutional-power relationships embedded within systems [5]. For example, getting social groups to actively participate in decision-making processes from the onset, to align goals, and design fair policies to work towards a common end goal. All three types of power emphasise the importance of relationships and dynamics between different actors, structures, and within contextual settings.

Nevertheless, we argue that ‘power within’ is best suited to understand the social injustices deeply embedded within societies. Hence, we interpret power as not being possessed by a particular agent or social structure, but instead, as a force that emerges from relational dynamics engrained ‘within’ institutional structures. It is this point of departure that we dig more deeply into in the next section, as part of setting out what a relational power approach means to us.

What a relational approach to power offers

Inspired by ‘power within’, we see power as changing over time and space, and through individuals and groups of people. Researchers with this interest may be able to see how power is

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felt and experienced, identify where it temporarily resides, and how it is appropriated and commodified within the research context. This conceptualisation of power helps Social Science researchers understand power's important role, yet nebulous nature, in exploring just transitions to e.g., net-zero.

A relational approach to power—between people, as well as people and things (e.g., infrastructures, technologies, devices, etc.)—therefore embeds researcher thinking within experiences of power relations. Our focus on just transitions uses this shared experience of power to elicit new evidence that is often hidden or not displayed amongst the noise of the climate or sustainability imperatives reported or monitored, that is things that are conspicuously requested by actual and imagined power bases of the accounting powers in the economy.

Prioritising relational considerations therefore facilitates an understanding of how power dynamics within socio-political structures create, maintain, or reduce social inequalities [6]. Additionally, studying, or at least acknowledging, how power dynamics form across multiple organisational, spatial, and temporal scales, allows researchers to identify where and how relational power dynamics are (de)stabilised.

For instance, if we take the example of doing research on the roles of businesses and industries in low-carbon energy transitions, then a relational approach to power would put the spotlight on the following sorts of questions: How do Local Governments engage with businesses, and vice versa? How do businesses perceive National Government's leadership in low-carbon transitions, and how does it influence businesses strategies and actions? What do businesses perceive their roles to be? And how do businesses cooperate with other businesses to driving progress?

Such questions are built on the foundations and traditions from decades of research on relational theory and justice. Relational theory addresses “normative and methodological concerns” about oppression and inequality [7, p.8], aiming to understand how actions and behaviours of individuals, minorities groups, and social groups are restricted by power relationships. Indeed, it has long been said that justice itself is a relational matter [8].

Recommendations for how researchers should approach relational power

Social Scientists are best placed to understand, investigate, and adapt to the complexities of power. We therefore encourage Natural and Technical Scientists working on climate and energy to do more to take relational considerations seriously; perhaps a first step is to reach out to Social Science colleagues who could integrate such considerations into prospective research projects.

Nevertheless, we close this opinion piece with three sets of recommendations on how Social Scientists could go about engaging with relational power dynamics in their research, especially if they are to effectively tackle social injustices existent in current structures and those potentially caused by low-carbon transitions. Taking inspiration from Settersten et al. [9, p.249-250], we reiterate the need for

1. *Multistakeholder and transdisciplinary collaborations*, which allow researchers to better understand the contexts of action that they are studying, and therefore also appreciate how power shapes and influences these relationships.
2. *Constant reflexivity*, which aids researchers in considering how power dynamics are co-constructed by the researcher's own situatedness, the research partners, and the participants.

3. *Critical evaluation*, which forces researchers to reflect on the inclusiveness and fairness of their research design, and ultimately the wider implications of power dynamics in the design and implementation of their research.

This is not an exhaustive checklist, but we hope that it will help spark dialogue on how relational approaches to power practically get done in climate and energy social science. Accounting for power will help researchers develop and maintain a watchful eye on the injustices of the climate crisis.

Author Contributions

Conceptualization: Camilla Seeland, Chris Foulds, David Arkell.

Formal analysis: Camilla Seeland.

Funding acquisition: David Arkell.

Investigation: Camilla Seeland.

Project administration: Camilla Seeland.

Supervision: Chris Foulds, David Arkell.

Writing – original draft: Camilla Seeland, Chris Foulds, David Arkell.

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