

Power

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Abstract

Power is important and inherent in inter and transdisciplinary (ITD) research and the implementation of research findings (policy and practice). Power shapes what we know, how we do science and how it is implemented and by whom, making is an important topic to consider in research design and research implementation. For example, power influences the language and terminology we use, the social-demographic makeup of research teams and which ideologies prevail in ITD research. Here we introduce the four most common approaches to identifying and understanding power including; i) actor-centred, ii) institutional, iii) structural, and, iv) discursive power and how they affect ITD research and practice. We also introduce different analytical framings of power including; “power-over” “power-with”, “power-to” and other approaches like Transformative Power Lab. Acknowledging and addressing power-related challenges and imbalances will inherently help to improve ITD research and practice through, for example, promoting inclusivity, reflexivity and empowerment, improving transparency, building trust and collaboration among stakeholders and possibly mitigating against conflicts in ITD.

Keywords: Actor, Discourse, Empower, Governmentality, Institution; Structural

Introduction

Power is inherent within research, policy and practice. Disciplinary research, and even more so inter- and transdisciplinary (ITD) research is imbued by power relations. Power dynamics shape what we know, how we do science as well as how research unfolds in society and it is very important to consider this in research design and implementation (Fritz & Binder, 2020). Addressing power-related challenges and imbalances contributes to reflexive ITD research and practice. While power is clearly visible in some cases (i.e. in institutional hierarchical structures) it often manifests in inconspicuous, complex and multifaceted ways and can have a strong influence on research and implementation processes – often in unwanted or unintentional ways. Accordingly, as a complex phenomenon, power can be understood and assessed in a multitude of ways, each entailing different theoretical foci and emphasising different sources and mechanisms.

Studying, assessing and addressing power issues is particularly important in the context of ITD research which engages with and integrates different knowledge domains, institutions and actors in a holistic manner and as such may have both obvious and subtle power dynamics at play. For example, in ITD projects and co-produced research power is inherent with regard to problem framing, deciding on research questions, how research partners are chosen, who undertakes what tasks within the project, what discourses are used, and how outcomes are implemented and communicated (Fritz & Binder, 2020; Fritz & Meinherz, 2020; Chambers et al. 2021). Understanding and acknowledging power dynamics within ITD programs can help with agenda- and rule-setting, productively engaging with conflicts and negotiations in projects and potentially aiding in more equitable decision-making in diverse teams (Fritz & Binder, 2020). Uncovering power dynamics can also help improve process design, build trust in ITD teams, and legitimise results and practice.

Common approaches to power

Power has been studied in the social sciences and humanities for centuries and is increasingly becoming an important topic within ITD research and board action-orientated research domains like conservation science and sustainability (Fritz & Meinherz, 2020; Kareem et al., 2022; Shackleton et al., 2023). Different social science disciplines have contributed to assessing and understanding power, leading to multiple theories, framings, and conceptualisations of the phenomenon which draw on different analytical approaches (Dean, 2012).

To give a broad overview, we summarise four common approaches to power and show how they emerge and manifest in ITD research (Fritz & Meinherz, 2020; Shackleton et al., 2023). We acknowledge that other conceptualisations of power exist in more vernacular explanations of the world (e.g. cosmologies, myths and spirits). Despite these four approaches stemming from different disciplinary domains and encapsulating different questions and objects of study, the boundaries between them are fuzzy and scholars often combine multiple framings and approaches to power in their work. The common framings of, approaches to or perspectives on power we highlight, based on Shackleton et al. (2023) include: 1) actor-centred power; 2) institutional power; 3) structural power; and 4) discursive power (governmentality).

1. *Actor-centred power* focuses on people and groups (e.g. researchers, community members, and practitioners) (Table 1). For this approach, power is an actor's (or a group of actors) capacity to act and impose their will on others, to overtly or covertly influence the actions of others or to predetermine their options or roles. In ITD research it can be

common that scientists hold more power in research design than practitioners, while community members' values and needs can have more power to inform the implementation of research findings. It can also, for example, cause conflict between team members and affect leadership roles. Acknowledging and addressing power dynamics among actors in ITD research can help to improve collaborations between actors and help to ensure that the voices and perspectives of all participants are heard.

2. *Institutional power* focuses on institutions and institutional systems. This includes analysing how power operates in and influences organisational units (governments, public administrations), formal rules and conventions (electoral systems, property rights, international conventions, local public policies) as well as informal and traditional institutions (norms, customs). In ITD, institutional power can shape how research findings are put into practice and by whom, as well as what rules and norms are followed in a project (Table 1). For instance, institutional funding structures can prioritize certain areas of research over others, while political structures can facilitate or hamper the uptake of recommendations from ITD research. Paying attention to institutional power can improve collaboration and the associated implementation of research findings by institutions, build synergies and continuity of work, reduce research implementation gaps and better understand and address competing interests and conflicts.
3. *Structural power* focuses on socio-political-economic structures in society. Power is seen to be stamped into social, political and economic structures and classes (but not vested in individual actors or institutions) leading to uneven distribution of and access to resources (material and symbolic). For example, in ITD, structural power may manifest in gender imbalances in ITD teams, how the roles in teams are distributed and underly the asymmetries in capacity and resources available between team members from different regions, disciplines or sectors (Table 1). Acknowledging and understanding structural power in ITD projects can help to promote more equitable sharing of resources in ITD projects and aid better capacity building for under-resourced domains or groups, for example, through decolonizing research relationships.
4. *Discursive power* focuses on power as knowledge and discourses. Power is seen to be constitutive of all social relations and individual subjectivities and it is exercised through the mobilization of dominant ideas, discourses and narratives to govern people and spaces by shaping and putting boundaries around possible behaviours (this process is also known as governmentality). For instance, in ITD research discursive power can affect the choices of research framing, language terminology or paradigms used which can in turn affect the kinds of research questions that are asked, the dominant ideas research produces and how these ideas are implemented (Table 1). Understanding and assessing discursive power can help to address structural imbalances, give a voice to the marginalised or different forms of knowledge and promote equitable research and ethical implementation of research findings.

Table 1. Four common approaches to identifying and understanding power and examples of how this can effect ITD research and practice

Type of power	Area of focus	Selected broad scale effects on ITD
Actor-centred power	People and groups	Affects group dynamics and leadership
Institutional power	Formal and informal institutions and institutional systems	Affects the project norms and rules that are followed
Structural power	Socio-political-economic structures in society	Affects factors such as gender balances in teams and differences in capacity and resources between scientists in the global north and south
Discursive power	Knowledge and discourses	Affects dominant ideologies and language used in research and practice

Analytical framings of power and examples of power at play in the context of inter- and transdisciplinary (ITD) research

The four different power perspectives are often combined into different analytical framings of power. One such analytical framing which has been used to study ITD projects combines “power over”, “power to” and “power with” (Fritz & Meinherz, 2020; de Geus et al., 2023). Here we elaborate on these three framings and provide examples relevant to ITD (Table 2).

Power over is power that is exerted over actors, institutions, structures and discourses “i.e. the ability of an actor or set of actors to constrain the choices available to another actor or set of actors in a nontrivial way.” (Allen 1998, p. 33). Power over can be a conscious act by a person or institution, or it can be “held or exercised in routine or unconsidered ways by people who do not necessarily deliberately intend to do so” (Allen 1998, p. 33), for example, though underlying unequal structures and/or as a result of dominant discourses. In the context of ITD, this reminds us to watch out amongst other things for imbalances in decision-making about problem framing, for unequal resources to engage in a knowledge production process, or for formats of integration that are conducive to some forms of knowledge, but not others. It also urges us to consider the role of discourses, which, for example, imply that the categorisation of actors as knowledge-holders and epistemic authorities should not be taken as given. Overall, power over puts an emphasis on assessing – often subtle and even unintentional – mechanisms of coercion, domination and manipulation in ITD research and highlights the repressive sides of power (Fritz & Meinherz, 2020).

Particularly when applied in cross-cutting fields such as sustainability and conservation, where transformational goals might intersect with knowledge production (or epistemic) goals, two additional faces of power warrant attention. These include the analytical framings of “power to” and “power with”.

Power to relates to a person’s agency and their ability to act to achieve their goals and desires. More specifically, Allen (1998, p. 34) defines power to as “the ability of an individual actor to attain an end or series of ends”. Power to has also been associated with the empowerment of an

actor, achieved through resistance for example. Power to deals with questions like “how can ITD help to enhance the capacities of actors from research and/or practice to achieve their goals?” (Fritz & Meinherz, 2020, p. 47). Such power dynamics manifest, for instance, when useful research findings and associated solutions help to legitimize researchers as experts in the eyes of practitioners and policymakers in their field or when communities are empowered through knowledge and skills gained in participation.

Power with refers to the capacity to collectively learn and act, and Allen (1998, p. 35) defines power with as “the ability of a collective to act together for the attainment of a common or shared end”. Finding commonalities and developing collective strength is at the core of this perspective which emphasises the productive aspects of power (Fritz & Meinherz, 2020). In the context of ITD, power with is manifest for example, when participating actors build trust and mutual understanding – ingredients which can provide a platform for successful project delivery and for further work and collaboration. Nurturing “power with” can, thus, be important for maintaining networks and leveraging the co-creation of knowledge.

For the context of ITD research such a tripartite consideration of “power over – to – with” is particularly pertinent given that this form of research is often associated with the aim of empowering certain ideas as well as the participating actors (power to) and of stimulating learning across societal sectors and disciplines (power with). To unleash this potential, design principles of ITD research allude to ideals of ‘co-development’ and ‘co-leadership’ and interactions with practitioners on ‘equal footing’ implying balanced power relations between the heterogeneous participants (hence avoiding dynamics of power over) (Fritz & Binder, 2020)

Table 2. Examples of manifestations of power over, power to and power within the different phases of inter and transdisciplinary (ITD) research projects. *Adapted from Fritz and Meinherz (2020 -*GAIA-Ecological Perspectives for Science and Society*).

Form of Power	The different phases of inter and transdisciplinary projects		
	Development phase	Knowledge production phase	Dissemination phase
Power over is wielded over actors, structures and discourses	Funding bodies shape the design of the project, leadership roles and allocation of resources	Unequal distribution of resources reduces practitioners' capacity to actively shape the process	Knowledge compilation is done by researchers only
Power to is the individual capacity to act	Researchers are legitimised by funding bodies to approach practitioners	Empowerment of practitioners through awareness raised	Enhanced capacities to act based on process results
Power with is the capacity to collectively learn and act	Joint framing and initiation of project based on previous collaboration	Co-production of results, co-creation of management/action plans, visions, scenarios	New alliances and partnerships emerge

In addition to what is presented above, many other analytical frameworks and tools have been developed to better understand or account for power in ITD research and practice. For example, the conceptual and methodological framework “Transformative Power Lab approach” (and the linked “Power guide”) was co-developed by a transdisciplinary team and helps to develop a better understanding of the power phenomenon in the context of sustainable transitions (de Geus et al., 2023). Transformative Power Lab also demonstrates how different theoretical conceptualisations of power can be translated into collaborative, transdisciplinary research designs. Furthermore, Chambers et al. (2021) provide six modes of co-production (including: researching solutions, empowering voices, brokering power, reframing power, navigating differences, and reframing agency) and power-related aspects feature hugely. These six modes provide a heuristic tool for different actors to critically explore and effectively navigate challenges and trade-offs in collaborative research, in many cases relating to power dynamics and empowerment.

Conclusion

Power is a complex phenomenon and operates in many often-unseen ways, which can affect various aspects of and can imbue all phases of ITD research. Power dynamics between and among researchers and practitioners in ITD can be both desirable and undesirable. The latter implies a normative judgment, that might vary depending on the objectives set for the ITD

process and the observer's standpoint. There are different concepts of power and tools to assess it, each of which sharpens our eye for specific dynamics and allows us to render visible some of the mechanisms at play. Drawing on multiple theories in parallel can, thus, be beneficial. While some power dynamics can be restrained by careful design and choice of methods, others are elusive and require continuous reflection and transparency as well as a productive engagement with tensions, negotiations, and conflict in ITD spaces. By stressing the diverse conceptions and manifestations of power, we hope to entice those engaging in ITD practice to think about how power dynamics within their projects intersect with power gradients in the wider societal context. In particular, when researchers and practitioners pursue transformational goals, reflexivity is needed to avoid reproducing and reinforcing existing power imbalances, knowledge hegemonies or dominant discourses (Fritz & Binder, 2020).

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