Sustainability Science
https://doi.org/10.1007/s11625-018-0543-8

SPECIAL FEATURE: ORIGINAL ARTICLE

The EJAtlas: Ecological Distribution Conflicts as Forces for Sustainability

A perspective on radical transformations to sustainability: resistances, movements and alternatives

Leah Temper[1] · Mariana Walter[1] · Iokiñe Rodriguez[2,3] · Ashish Kothari[4] · Ethemcan Turhan[5]

Received: 29 June 2017 / Accepted: 20 February 2018

Abstract

A transformation to sustainability calls for radical and systemic societal shifts. Yet what this entails in practice and who the agents of this radical transformation are require further elaboration. This article recenters the role of environmental justice movements in transformations, arguing that the systemic, multi-dimensional and intersectional approach inherent in EJ activism is uniquely placed to contribute to the realization of equitable sustainable futures. Based on a perspective of conflict as productive, and a "conflict transformation" approach that can address the root issues of ecological conflicts and promote the emergence of alternatives, we lay out a conceptual framework for understanding transformations through a power analysis that aims to confront and subvert hegemonic power relations; that is, multi-dimensional and intersectional; balancing ecological concerns with social, economic, cultural and democratic spheres; and is multi-scalar, and mindful of impacts across place and space. Such a framework can help analyze and recognize the contribution of grassroots EJ movements to societal transformations to sustainability and support and aid radical transformation processes. While transitions literature tends to focus on artifacts and technologies, we suggest that a resistance-centred perspective focuses on the creation of new subjectivities, power relations, values and institutions. This recenters the agency of those who are engaged in the creation and recuperation of ecological and new ways of being in the world in the needed transformation.

Keywords Environmental justice · Radical transformations · Conflict transformation · Alternatives · Power

Introduction

Sustainability science literature increasingly calls for a "transformation to sustainability" to address overlapping and converging social and ecological crises (Future Earth 2014). This has led to a wealth of scholarship under the rubric of transition studies dedicated to understanding, managing and guiding society towards the needed transformation (Gillard et al. 2016; Feola 2015). However, while the political and contested nature of such transformations are acknowledged by some scholars (Stirling 2015; Jørgensen 2012), the literature on transitions as well as transformations remains primarily depolitized, technocratic and managerial (Olsson et al. 2014; Rotmans et al. 2001) with the normative

Handled by Arnim Scheidel, Erasmus University Rotterdam International Institute of Social Studies International, Institute of Social Studies (ISS), The Netherlands.

✉ Mariana Walter
mariana.walter@uab.cat; marianawalter2002@gmail.com

Leah Temper
leah.temper@uab.cat

Iokiñe Rodriguez
i.rodriguez-fernandez@uea.ac.uk

Ashish Kothari
chikikothari@gmail.com

Ethemcan Turhan
ethemcan@kth.se

[1] Institute of Environmental Science and Technology (ICTA), Universitat Autónoma de Barcelona (UAB), Barcelona, Spain

[2] School of International Development, University of East Anglia, Norwich, UK

[3] Grupo Confluencias, Latin American Network
https://www.facebook.com/GrupoConfluencias/

[4] Kalpavriksh and Vikalp Sangam, Pune, India

[5] Environmental Humanities Lab, Division of History of Science, Technology and Environment, Royal Institute of Technology (KTH), Stockholm, Sweden

Published online: 14 March 2018

assumptions underlying the profound interventions required in society remaining either unexpressed or ambivalent (Shove and Walker 2007).

Somewhat tautologically, transitions are defined as "radical transformation[s] towards a sustainable society, as a response to a number of persistent problems confronting contemporary modern societies" (Grin et al. 2010). Nonetheless, this definition rather conflates two competing or at best complementary approaches. In contrast with the transition approach, which potently argues for a peaceful, manageable shift, transformation implies "radical, systemic shifts in deeply held values and beliefs, patterns of social behavior, and multi-level governance and management regimes" (Westley et al. 2011:762; see also; Olsson et al. 2014). This calls for "unruly politics" and "diverse knowledges and multiple actors" (Scoones 2016). Thus, a heuristic distinction can be made between "transitions" and "transformations" as pathways for social change (Stirling 2015). 'Transitions' can be seen as processes managed "under orderly control, through incumbent structures according to tightly disciplined knowledges, often emphasizing technological innovation, towards some particular known (presumptively shared) end" (ibid: 54).'Transformations', in contrast, involve "more diverse, emergent and unruly political alignments, more about social innovations, challenging incumbent structures, subject to incommensurable knowledges and pursuing contending (even unknown) ends" (ibid: 54). As highlighted by Johnstone and Newell (2017), in a "highly inter-dependent global economy where capital, social movements and regional and global institutions reconfigure sites of politics [...] flows of power need to assume a more central place in accounts of transitions". This, we believe, is the entry point for emancipatory struggles by excluded classes, ethnicities, slaves, workers, colonies, women, young people and diverse sexualities.

Recent research has focused on the scope of transformation, seeking to differentiate its logics, tools, agents and dimensions. Scoones et al. (2015) identify four types of transformation as technocentric, marketized, state-led and citizen-led. Particularly, the latter pathway, citizen-led transformations require a deeper engagement with multiple identities, cultures and practices in understanding the scalar politics, institutional contexts as well as state–society tensions as obstacles to radical transformations. There have been calls to address politics and power in transformation research (Olsson et al. 2014; Shove and Walker 2007); address societal justice as a central concern for transformations (Patterson et al. 2018) and to track winners and losers in different climate change adaptation pathways (Pelling et al. 2015). However, apart from some limited work (e.g. Geels 2006; Scoones et al. 2015), to date sustainability science literature has not paid sufficient attention to the role that social movement activity and resistance play in transformations to sustainability. Some exceptions include Scoones et al. (2015) on green transformations which as well as discussing citizen-led transformations examine 'culturing radical progress' (Stirling 2015) emancipating transformations (Leach and Scoones 2015), grassroots innovation (Smith and Ely 2015) among other relevant insights.

While sustainability science literature is slowly engaging with the transformative power of resistance, supporters of EJ movements and activists have been making this argument for long in other arenas. For instance, Arturo Escobar's work has engaged with the role of place-based social movements in new imaginaries. Likewise, there is an ample literature on progressive peasant movements (Edelman 2001; Borras et al. 2008; Temper 2018; Scoones et al. 2017), global environmental justice (Sikor and Newell 2014; Scheidel et al. 2017, this issue) as well as specific food (Patel 2009) and climate justice (Bond 2012; Chatterton et al. 2013) struggles or transformations in new emerging economic imaginaries (Gibson-Graham 2008). These radical transformative movements work across the scales, often 'in, against and beyond' the given state structures (Angel 2017; Routledge et al. 2018). Our working definition of radical transformation also takes into account legal and extra-legal societal battles fought, with increasing cases of climate litigation (van Renssen 2016) as well as place-based forms of overt resistance (Temper and Martinez-Alier 2017).

A focus on environmental justice

In economic growth-oriented economies, increasing ecological mal-distribution (Martinez-Alier and O'Connor 1996) remains even more obscured than economic inequality, as well-being continues to be measured primarily in monetary terms with the use of instruments such as GDP. However, as the EJatlas demonstrates, such inequalities manifest through struggles for ecological redistribution, which we may otherwise term struggles for environmental justice (EJ) and ecological conflicts. Dimensions of environmental justice include the distribution of burdens of pollution and access to environmental resources, the right to participate in decision-making, and the recognition of alternate worldviews and understandings of development. In the act of claiming redistributions, these conflicts are often part of, or lead to larger gender, class, caste, and ethnic struggles, and help to move the economy into a more sustainable direction (Temper et al. 2015). In this article, we explore such movements struggling for environmental justice as potential agents in radical transformation.

As Pugh (2009) reminds us, radical is derived from the Latin noun 'radix' meaning 'roots'. In this sense, a radical transformation not only digs the roots of a problem but also engages with turning it over by creating new societal meanings and practices. However, this just does not happen

on a *tabula rasa*. Radical transformations today can only come into being by building on and learning from much longer histories and experiences of resistance. Given that social movements by definition aim towards social transformation of the current system and that EJ movements are specifically committed to social mobilization to bring about more sustainable and equitable futures, the lack of attention to their role as transformative agents in the change process represents a significant gap in our understanding of transformation. Further, even amongst radical scholars that are putting forward and analyzing processes of alternatives and transitions to post-capitalist futures (Asara et al. 2015; Escobar 2015; Gibson-Graham 2006; Chatterton 2016; Roelvink et al. 2015) we would argue that the role of resistance to environmental exploitation and ecological violence, often manifested through ecological conflicts, remains under-examined.

This paper aims to fill this gap, arguing that sustainability science and transition literature may largely benefit from incorporating perspectives from political ecology, social movement studies, EJ and conflict transformation praxis to understand how social change that prefigures more sustainable practices emerge from social movement actors engaged in ecological conflicts and how alternatives emerge from them. The article draws from the approach and methodology being adopted for understanding social transformation towards sustainability within the ACKnowl-EJ research project and the EJatlas. This paper explains the project's approach to conflict, transformation and power as a way to deepen understanding of transformations to sustainability. In this paper, we focus on the following five considerations:

1. Social transformation towards more sustainable future often occurs as a result of conflict. Oppositional consciousness and resistance to hegemonic structures are a key element in the creation of alternative ways of being and doing.
2. A perspective of conflict as productive, rather than something to be avoided, suggests the usefulness of a "conflict transformation" approach that can address the root issues of ecological conflicts as a path towards transformations to sustainability.
3. Radical alternatives are a form of resistance that advances a vision of what sustainable transformative processes could look like.
4. A transformation to sustainability must entail transformation of power relations.
5. Social transformation studies need to pay attention to such power relations across multiple dimensions and scales to fully capture how transformation processes occur and that processes are truly transformative and that inequalities and injustices are not being created elsewhere or displaced.

While this paper outlines a methodology for understanding transformation, we would like to stress that this is not a purely 'academic' exercise but has been developed and will be continually co-created together with communities and societies in movement who aim to make their resistance more effective, proactive and transformative. This approach is being continually developed with case study communities and networks (e.g. Vikalp Sangam, the Confluencias network) who are aiming to deepen and further their own transformative process. We hope these tools can be further refined through scholar–activist collaboration and become available to other communities that can use to further deepen their reflexivity regarding their own process of transformation.

At the same time, this paper aims to distill learnings from the thousands of resistances documented in the EJatlas on transformation in the understanding that "to effectively resist in ways that foster social change and ever-expanding human liberation, we need to learn from both previous and ongoing struggles all over the world. We need to accrue resistance knowledge. We need to understand how power and resistance interact, and how they factor in the struggle for social change" (https://www.umass.edu/resistancestudies/about).

This paper proceeds as follows. After this introduction, we situate the work and ourselves, explaining how this work draws from several grounded and grassroots initiatives and aims to co-produce knowledge with and for communities and social movements. The third section develops the conceptual background of the work through a discussion on radical transformations to sustainability, EJ, ecological conflict transformation and alternatives. The fourth section lays out a conceptual framework for understanding transformations through a power analysis that aims to confront and subvert hegemonic power relations. A framework that is multi-dimensional and intersectional, balancing ecological concerns with social, economic, cultural and democratic spheres. This approach is multi-scalar and mindful of impacts across place and space. We conclude with a brief discussion and agenda for future research.

Background: situating ourselves and the research

The ACKnow-EJ (Activist-academic-co-production of knowledge for Environmental Justice) project is formed by a group of scholar–activists situated both within and outside the academy who are interested in: (a) understanding and supporting social transformation and resistance to extractive activities and imposed development, (b) creating linkages between academia and activists, and (c) helping to give visibility to communities, movements and initiatives that are putting transformative alternatives into practice. We have

come together to create a space for reflection and action on questions such as (a) the role that processes of resistance formation against "extractivism" play in shaping local and global transformations for sustainability and in dealing with the global environmental and social crisis from the ground up, (b) how processes of conflict transformation and creation of development alternatives are carried out, and (c) what determines their success over time. In other words, we want to contribute to a better understanding of "what needs to be transformed" for more sustainable futures from the perspective of resistance movements, "how can it be transformed" and "what truly transformative alternatives are". In this sense, Acknowl-EJ subscribes to a 'right here, right now' approach for transformations and aims for its research to be transformative and to affect change that empowers others (Moser 2016; Temper and del Bene 2016).

This ACKnowl-EJ project is grounded in three initiatives that aim to co-produce knowledge with and for communities,The Ejatlas, The Grupo Confluencias network and Vikalp Sangam, described below. All three initiatives are dedicated to capacities for action and practice-based research and follow the principles of the co-production of knowledge, learning/teaching processes, reflexivity, and the creation of research outputs that answer to the scientific rigour of academia and political rigour with actors in environmental struggles. This transformative EJ research agenda stresses the importance of engagement with critical scholars, scholar–activists and activists and recognition of the epistemologies and ontologies of marginalized voices, for a co-production and reproduction of plural knowledges.

The EJatlas

Research as part of the EJatlas (http://www.EJAtlas.org) project over the past 4 years has focused on producing a bottom-up documentation and mapping of the numerous conflicts over extraction taking place in various parts of the world and have helped make visible the violence perpetrated by states and corporations against resisting populations (Temper et al. 2015). The Atlas' 2300 cases (as of Jan. 2017) provide a repository of cases of diverse, radically challenging and overtly political agonistic forms of contestation of environmental inequality by subaltern social movements. It offers an opportunity to tune into the plurality of grassroots voices that are opposing specific economies, institutions, infrastructures and cultures that are at the root of the ecological crisis. It demonstrates the diversity in these movements as well as the commonalities that join them under a global and globalizing movement for environmental justice (Martinez-Alier et al. 2016).

While the atlas was originally designed to emphasize, make visible and dissect processes of environmental *in*justice, in the ACKnowl-EJ project it is being used as an empirical base for examining what EJ looks like in practice and for understanding the multiple and creative agency of EJ groups, as "altering" forces of the status quo. In many cases, these struggles propose and put forward their own visions of transformations. The cases can illuminate how and when democratic and transformative processes that arise in response to extractive processes move from the individual to the community level and then disseminate outwards. The result will be deeper understanding of the creativity and the productivity of environmental conflicts.

Grupo Confluencias: conflict transformation practitioners in Latin America

The second is Grupo Confluencias, a group of Latin American conflict transformation practitioners and researchers who have been working since 2005 as a platform for deliberation, joint research, and capacity building on this topic. Members of this network play a combination of roles in conflict transformation: dialogue facilitation, peace building, advice and capacity building for indigenous peoples and urban/rural communities, policy advice on environmental and sustainable development issues and action research in their respective countries.

Grupo Confluencias adapted the Conflict Transformation concept (which originated in Peace Studies for post-armed conflict contexts) to the particular case of socio-environmental conflicts to help guide and assess conflict transformation processes in Latin America. They have developed a "Transforming Socio-Environmental Conflicts" (TRANSECT) Framework designed to learn from transformations brought about by resistance movements, activists, academics and policy makers that are trying not only to engage with the root causes of environmental conflicts in the region, but also to help enhance these processes of change through helping vulnerable and other key actors conceptualize and strategize conflict transformation.

A central aspect of the Conflict Transformation Framework is the attention paid to understanding the role that power dynamics and culture play in environmental conflicts and their transformation (see Sect. "Oppositional consciousness and conflict transformation" below). It seeks to help understand how hegemonic power is exercised in environmental conflicts but most importantly, how such hegemonic power is confronted, contested and impacted to create more social and EJ. Thus, with a focus on power analysis, conflict transformation strategies and their impacts, it can help identify concrete processes of transformations brought about by resistance movements and other actors (see Rodriguez et al. 2015).

Vikalp Sangam (alternatives confluence), India

The third is the experience of an ongoing process called Vikalp Sangam ('Alternatives Confluences'), a platform for networking of groups and individuals working on alternatives to the currently dominant model of development and governance, in various spheres of life (for more information: http://kalpavriksh.org/index.php/alternatives/alternatives-knowledge-center/353-vikalpsangam-coverage) (Daga 2014; Kothari 2016; Thekaekara 2015). Its major activity is the convening of regional and thematic Confluences across India (Kothari 2016) whereby people exchange experiences and ideas emerging from practice and thinking in a whole range of endeavour: sustainable agriculture and pastoralism, renewable energy, decentralised governance, community health, craft and art revival, multiple sexualities, inclusion of the differently abled, alternative learning and education, community-based conservation, decentralised water management, urban sustainability, gender and caste equality, and more.

Beyond the sharing of practical experiences and the documentation and dissemination of stories of transformation hosted on the website, one of the most important outputs of the Vikalp Sangam process is a conceptual framework of transformative alternatives. This framework aims to dissect the different spheres of transformation involved in radical alternatives. It is important to realise that while this framework has significant elements of 'ideology' in it, it is not based on or emanating from Marxist, Gandhian, Ambedkarite, or other radical ideologies that movements in India relate to, but rather on the wisdom and concepts emerging from grassroots communities and groups (see Kothari 2016 for linkages between the concepts in the framework, and actual alternative initiatives in India). It is constantly evolving, after discussions at each Sangam. Several hundred people from the range of sectors mentioned above have debated the various aspects of the framework.

The ACKnowl-EJ Project offered the opportunity for these three networks to come together to conceptualize what an approach for analysing radical transformations to sustainability would look like.

Transformations to sustainability: radical vs. reformist perspectives

When we talk about transformation, what are we really talking about? When can we say that something has been transformed? Who are the agents of transformation? And what is it that needs to be transformed? Transformation is an amorphous term and recently somewhat of a buzzword. This has led to calls for the need for clearer definition of the term; and the need to differentiate transformation from transition. Further, we believe it is necessary to parse out and better define radical initiatives and alternatives as those that offer the clearest paths to transformation.

Transformation by definition needs to reconfigure the structures of development through changing overarching global political economy dominated by neoliberal capitalism with increasing authoritarian tendencies in our day (Pelling 2011). It includes "radical shifts, directional turns or step changes in normative and technical aspects of culture, development or risk management" (Pelling et al. 2015). In this perspective, transformation deals with the deeper and obscured roots of unsustainability, laden in social, cultural, economic and political spheres. These relatively invisible root causes often overlap and interact to produce uneven outcomes (Pelling 2012) including feedbacks. According to Scoones (2016), transformations to sustainability require a shift beyond scarcity discourses towards a politicized understanding of resources and sustainability. Thus, if transformation is to be achieved in an empowering and pro-poor way then a truly politicized view which exposes, problematizes and resists the ongoing reproduction of harmful power relations is inevitable (Gillard et al. 2016). The basis of such view for a transformative approach to sustainability can already be found in the "ruthless criticism of all that exists, ruthless both in the sense of not being afraid of the results it arrives at and in the sense of being just as little afraid of conflict with the powers that be" (Marx, letter to Arnold Ruge, September 1843).

While there is broad acknowledgment, a transformation to sustainability requires a radical shift, including a shift in society's value-normative system and shifting relations across the personal (i.e. beliefs, values, worldviews), political (i.e. systems and structures) and practical (i.e. behaviours and technical responses) levels simultaneously (O'Brien and Sygna 2013); there is less consensus about what the "radical" in radical transformations means. The word "Radicalis" comes from the Latin "of or having root" and refers to "change at the root" with connotations to fundamental and revolutionary change of social systems. A radical social perspective inherently calls for addressing social justice and power issues, as well as environmental ones in the transformation process.

Nancy Fraser's distinction between what she terms affirmative vs. transformative change is illustrative. She argues that injustices may be resolved either affirmatively or transformatively. Affirmative redistributive remedies aim to correct existing income inequality by facilitating transfer of material resources to maligned groups, for example, through the social welfare state. However, these remedies tend to leave intact the conditions, such as the capitalist mode of production, that were responsible for generating income inequality in the first place. In contrast, transformative redistributive remedies are aimed at eradicating the origins of

economic injustice and eliminating the root causes of economic inequality and would include "redistributing income, reorganizing the division of labour, subjecting investment to democratic decision-making, or transforming other basic economic structures" (Fraser 1995, p. 73). Regarding recognition and identity conflicts, the transformative remedy, in contrast to affirmative action, entails the deconstruction of identities themselves and the transformation of the underlying cultural-valuational structure. For example, "queer politics" based on the destabilization of existing group identities and the dissolution of the homo/hetero binary serve not only to raise the self-esteem of members of currently disrespected groups—they transform everyone's sense of self.

In this way, we believe it is important to differentiate initiatives by communities, civil society organisations, government agencies, and businesses that are dealing only with the symptoms of the problem, and can be considered reformist initiatives, from those alternatives and movements which are confronting the basic structural reasons for unsustainability, inequity and injustice, such as capitalism, patriarchy, state-centrism, or other inequities in power resulting from caste, ethnic, racial, and other social characteristics. We call these transformative or radical alternatives.

It should also be noted that there is no necessary contradiction between reform and transformation; many reform measures may well be contained within transformative processes, and some reforms if stretched far enough can also be transformative. This was referred to by Gorz (1967) as non-reformist reforms, arguing that:

> A reformist reform is one which subordinates its objectives to the criteria of rationality and practicability of a given system and policy. Reformism rejects those objectives and demands—however deep the need for them—which are incompatible with the preservation of the system. On the other hand, a not necessarily reformist reform is one which is conceived not in terms of what is possible within the framework of a given system and administration, but in view of what should be made possible in terms of human needs and demands.

Following Gorz, we may argue that a radical transformation needs to be based on attaining the impossible rather than limiting itself to purely technical questions and narrowly constrained approaches based on questions of ecological sustainability such as energy production technologies and costs. David Harvey (2011) calls this as 'co-revolutionary theory', which picks up transformative steam both from grassroots movements but without ignoring the reclamation of hegemonic state structures. The "Initial point of entry for alternatives is less important than the need to infect and influence other domains" suggests Pelling (2012: 7) where societal "shifts and movements are not minor historical events and most likely require energies both at the grassroots as well as momentum from above". This, we argue, is the basis of a radical transformative agenda: flourishing rooted, local alternatives connected to wider political transformations meanwhile paying utmost attention to historical, social and political specificities to build emancipatory sustainabilities (Scoones et al. 2017).

Because EJ movements put forward that environmental problems are political issues that cannot be solved apart from social and economic justice and that these call for a transformative approach and the restructuring of dominant social relations and institutional arrangements, we argue that EJ movements need to be at the core of sustainability transformations. EJ brings attention to both the multi-valent aspects of justice, from distribution to cultural recognition to participation, capabilities, cognitive justice and beyond, as well as an intersectional approach to forms of difference across lines of class, race, gender, sexual preference, caste, ability, etc. This multi-dimensional and intersectional approach has been sorely lacking from transformation studies. Further, the EJ approach focuses on the interdependency of issues, seeing environmental devastation, ecological racism, poverty, crime, social despair, alienation from community and family as aspects of a larger rooted systemic crisis. Finally, radical politics and alternatives and knowledge on how to confront hegemonic power and injustices is often created through processes of struggle.

For us, radical transformation implies one which refers to a transformation of power structures and relations, from a situation of domination, injustice and violence and unsustainability to one of reduced violence, increased equality and flourishing. It entails challenging the sources of domination and oppression including capitalism, patriarchy, state-centrism and inequities along lines of race, caste, ethnic, gender, ableism, sexuality and others and is thus multi-dimensional and intersectional, balancing ecological concerns with social, economic, cultural and democratic spheres. Finally, it is multi-scalar, and mindful of impacts across place and space; and informed by and through values and movement knowledge in opposition to dominant narratives.

Oppositional consciousness and conflict transformation

We hold that the manifestation of ecological conflict is the first step of sustainability transformations. This is because conflicts express a questioning of the status-quo and of a system where some have to be polluted, displaced and deprived.

McAdam (2010) uses the term "cognitive liberation", to describe the process through which hopeless submission to oppressive conditions is transformed to a readiness to challenge those conditions. He argues that one of these conditions is a group process in which people jointly begin

to define their situation as unjust and subject to change through some type of collective action. This concept is echoed by the work on oppositional consciousness by Sandoval (2000) and Mansbridge and Morris (2001), who define it as "an empowering mental state that prepares members of an oppressed group to undermine, reform, or overthrow a dominant system". While Monedero (2009), in his theory of social change, argues that hurting, and being able to critically locate and analyze the causes and the sources of this pain, and acknowledging the possibility to confront and change it, is the first essential step in social transformation. Monedero's theory of social change refers to a progression from doler (hurting) to saber (knowing) to querer (desiring) to (poder) acting to hacer (doing). As he writes, the mere questioning of inequalities is revolutionary because it entails imagining that things could be another way.

While marginalized groups are often socialized to accept their unequal position, this realization of the capacity to act in the world and to change the future is thus a precursor to the formation of EJ movements. As EJ movements organize to counter dominant ideologies and power structures, new understandings and critiques of these structures emerge, which lead to visions for radical social change. This emphasizes the significance of knowledge production for transformation within movement activism as a force for change.

EJ struggles go beyond demanding redistribution of environmental resources, but rather contest the very economic, ecological, social and cultural principles behind particular uses of the environment (Gadgil and Guha 1993). In some cases, those resisting an extractivist project are often articulating an anti-systemic vision for societal transformation to sustainability within their resistance practices. Further, the organizing and collective action they engage in defence of their lives and livelihoods often inspires the quest for more localized and democratic forms of governing resources and commons and leads to new practices and alternative forms of provisioning and production. This highlights the productivity of conflicts in the creation of transformation and alternatives.

Conventional approaches to social and ecological conflicts generally adopt a perspective focused on conflict resolution/management which aims on achieving a mutual satisfaction of interests among actors based on the maximization of individual gains: win–win solutions, through cooperation, negotiation and consensus seeking (Fisher and Ury 1981; Ury et al. 1988). Under this approach, conflicts tend to be seen as negative phenomena to be avoided and "resolved" as quickly as possible. However, such approaches can lead environmental conflicts to become recurrent and cyclical because they offer little opportunities for developing solid democratic and sustainable agreements for the use and management of the environment and territories. Environmental conflicts have complex and profound roots, in the majority of cases with an important political, historical, social, environmental and cultural components and profound power asymmetries and institutional failures, which limit the possibility of them being successfully dealt with through conventional, facilitated conflict resolution methods.

In contrast, a *conflict transformation approach*, sees conflicts as a natural and inevitable part of human interactions that can have constructive potential. Following a similar line of thought to the one that underpins the concept of *cognitive liberation*, the starting point of conflict transformation is that conflict is rooted in situations that are perceived as unjust, and by unearthing and making injustices visible, conflicts become catalysts for social change (Dukes 1996; Lederach 1995). While conflict resolution tends to focus on reaching agreements and overcoming a crisis situation, conflict transformation engages with a much bigger question: the pursuit of justice in society through the restoration, rectification of wrongs and the creation of right relationships based on equity and fairness (Botes 2003; Lederach 1995). Lederach (1995) defines conflict transformation as the process that helps us visualise and answer to the flow and backflow of social conflict as life opportunities that can create processes of constructive change, reduce violence, increase justice in interactions and social structures and respond to the real problems of human relations.

Alternatives

EJ struggles also express in the form of counter hegemonic alternative processes and narratives. Political ecologist Paul Robbins advocates what he terms a "hatchet and seed" approach (Robbins 2004). This entails a dual task of deconstructing and discarding dominant narratives, while also identifying alternative practices and knowledges and bringing these positive examples and theoretical innovations developed by and through social movements and community activists to light.

While we are concerned with the role of conflict and resistance in transformation, an integral element of this resistance is the social movements that are not actively opposing particular projects such as those defined by the EJatlas, but those engaged in practices that provide an alternative to a part or the whole of the currently dominant system, challenging one or more of the capitalist, statist, patriarchal, religious, casteist or other structures of power inequity. For instance, a group of women farmers transforming their agricultural systems away from one of dependence on chemicals, corporate seeds, and government credit towards self-reliance for seeds, organic inputs, local exchange and collective credit, and local knowledge, are not necessarily struggling against a particular project or company but rather against a global agro-industrial model of injustice.

Alternatives can be understood as practices, performances, systems, structures, policies, processes, technologies, and concepts/frameworks, practiced or proposed/propagated by any collective or individual, communities, social enterprises, etc. that usurp, challenge the capitalist mainstream and that reflect a diversity of exchange relations, social networks, forms of collective action and human experiences in different places and regions (Gibson-Graham 2006). Alternatives can be continuations from the past, re-asserted in or modified for current times, or new ones; it is important to note that the term does not imply these are always 'marginal' or new, but that they adopt and operate with values and ideologies that overtly reject hegemonic economic and political practices. While they may position their activities in non-confrontational and potentially apolitical terms, their attempt to create alternatives to the hegemonic system is also often informed by an oppositional consciousness. This may include groups engaged in small-scale energy production: organic farming and permaculture, open-source software, and other forms of radical grassroot experimentation. While these groups are less likely to explicitly position themselves as EJ movements, through their embodied practices they can be said to be advancing a vision of what EJ could look like.

Furthermore, following Paul Robbin's analogy on the "hatchet and seed", there is resistance that is over conflict with and struggle to break down prevailing unjust ways of knowing and doing. And, there is the development and practice of alternatives. Both are interlinked ways of resistance and/or opposition (oppositional consciousness and oppositional practice), rebelling against hegemonic forms of power that prevents the conceiving of alternatives. Conflict and alternatives are intertwined processes. EJ struggles are spaces of re-imagination, where ones and the others ways of thinking, seeing the world and doing are disputed and reshaped in a dynamic and multi-scalar learning process. Moreover, alternatives can be both the result or the root of resistance processes. Communities can rebel against the de-legitimation of their values, worldviews and related practices. In the context of increased pressures and conflicts related to the mining activities in Latin America, social movements are developing strategies to develop and strengthen local alternatives during, after and before the unfolding of conflicts. Alternatives are also fostered as a strategy to prevent and oppose (e.g. Walter et al. 2016). Thus, social movements, resistance and alternatives are linked processes. People move across these spaces, protesting when they need, engaging in rebuilding when they need to.

Power, dimensions and scales

EJ struggles and alternatives are powerful processes where intended (and unintended) social transformations occur. However, the particularities of these processes remain under-examined. In this section, we highlight three relevant approaches/elements to examine how social transformations emerge and evolve, particularly but not exclusively, in the context of EJ struggles and alternatives. First, we distinguish between different types of power that EJ movements transform in their struggles. Second, we propose an approach to examine transformation processes from multi-dimensional perspective that allows to unravel what is transformed and how in these processes. Third, we outline three scalar dynamics at play in transformation processes.

Power

As we have argued, a radical perspective on transformation calls for an explicit engagement with the issue of power in environmental struggles. It is precisely by impacting on hegemonic power structures that EJ movements manage to advance their vision of EJ. Yet, to see how this process of change takes place or how it can be more effectively produced, it is necessary to dissect hegemonic power in its different forms. The notion of power as domination is the most commonly known. It implies the idea of imposing a mandate or an idea (Bachrach and Baratz 1962). However, the power of domination is not always exercised coercively, but through subtle mechanisms. In this sense, domination can manifest in the form of visible, hidden (Foucault 1971) and invisible/internalized forms of power (Lukes 1974; Gaventa 1980).

In society, the "visible" face of power is manifested through decision-making bodies (institutions) where issues of public interest, such as legal frameworks, regulations and public policies, are decided (e.g. parliaments, legislative assemblies, formal advisory bodies). This is the public space where different actors display their strategies to assert their rights and interest. Visible power is also manifested through economic frameworks that shape economic activities and productive systems in society. This type of power is also known as *structural power*.

But much of the time power is exercised in a "hidden" way by incumbent powers attempting to maintain their privileged position in society, by creating barriers to participation, excluding issues from the public agenda or controlling political decisions "behind the scene". In other words, the power of domination is exercised also by *people and power networks* (Long and Van Der Ploeg 1989),

which are organized to ensure that their interests and worldviews prevail over those of others. Third, the power of domination also works in an "invisible" way through discursive practices, narratives, worldviews, knowledge, behaviours and thoughts that are assimilated by society as true without public questioning (Foucault 1971). This invisible, capillary, subtle form of power often takes the shape in practice (following Galtung 1990) of cultural violence, through the imposition of value and belief systems that exclude or violate the physical, moral or cultural integrity of certain social groups by underestimating their own value and belief systems.

These invisible forms of power are "materialized" in state institutions, the market and civil society, giving rise to a structural bias in relationships and consequent asymmetrical power relations. Therefore, this form of invisible power is also known as *cultural power*. Here, people may see certain forms of domination over them as "natural" or immutable, and, therefore, remain unquestioned. In this way, invisible power and hidden power often act together, one controlling the world of ideas and the other controlling the world of decisions.

This distinction between power concentrated in institutions, people and culture is very important for understanding relationships of power and domination in environmental struggles and in the perpetuation of environmental injustices. The challenge for overcoming violence, injustice (Young 1990) and, therefore, for achieving conflict transformation is to generate strategies to impact on these three areas in which power is concentrated: (a) institutions, legal and economic frameworks, (b) on people and their networks, and (c) in discourses, narratives and ways of seeing the world. The final outcome of the struggles in terms of achieving the desired transformation depends on knowing how and when to impact on each one of the types of hegemonic power.

An understanding of the strategies used by resistance movements to impact on the different types of hegemonic power and their successes or limitations is an essential part of a radical approach to the study of transformation to sustainability. In this sense, the authors of this paper advocate for a shift from conflict resolution to conflict transformation approaches (with a rich tradition in Peace Studies, see John Paul Lederach, Johan Galtung).

A summary of strategies commonly used in EJ struggles to impact on hegemonic power in each one of these spheres can be seen in Fig. 1, which we now turn to explaining.

Impacting on people and networks

One of the challenges of EJ movements is to impact on powerful people and networks so their views can have a place in decision-making. Resistance movements do this in different ways.

One common way is by creating and strengthening their own networks to advance political action and social mobilization strategies that can help them impact on existing laws, political systems, and economic frameworks (see below on hegemonic power). Another way is by creating alliances with academics and human rights and environmental justice activists that can help strengthen their own social and political organization, local leadership, and dialogue/negotiation tactics to be in a more symmetrical position in dialogues or negotiations. An example is the Water War in Bolivia in 2000, where the Bolivian government attempted to sanction a new Law on Privatization of Water and Sewage without local consultation. The law met with strong resistance and intense mobilization from the part of *campesino* and indigenous people of Cochabamba to the point that the law could not be approved. The Water War is renowned for the intense political and social mobilization that it generated through the development of press and media campaigns, lobbying, lawsuits and public demonstrations claiming respect to traditional water uses and customs. But perhaps the most interesting aspect of this case was not the external strategies, but the internal ones developed by the local organizations during the conflict that allowed them to negotiate as equal partners and eventually to reverse the legislation (EJAtlas 2015a, b).

To achieve this, they worked closely with political scientists and community advisers on four issues so as to overcome relations of domination in conflict negotiations: (a) how to control or modify internal organization factors, (b) how to increase awareness of external factors in the conflict, (c) how to develop parallel actions to negotiations, and (d) how to increase the technical knowledge of dialogue and negotiation procedures (Crespo 2005). Other forms of capacity building and the development of community protocols applied towards consultation or prior informed consent are other ways conditions of participation in policy making can be improved (Rodriguez et al. 2015).

Another related issue is the generation of new knowledge to deal with uncertainties inherent to socio-environmental conflicts. Environmental conflicts often arise out of social perceptions of risk generated by extractive activities, large-scale development or local natural resources use practices. This may include the health risks related to mining to the environmental impacts of local subsistence activities such as slash and burn agriculture and savannah burning. In both cases, conflict is often perpetuated by the lack of reliable information to determine accurately the real impacts of certain activities.

Communities can generate knowledge about these risks themselves, for example, through community participatory research or environmental monitoring projects that seek to assess the impact of their own livelihood practices or of mining and extraction activities in their territories. In other cases, new knowledge to help solve uncertainties is

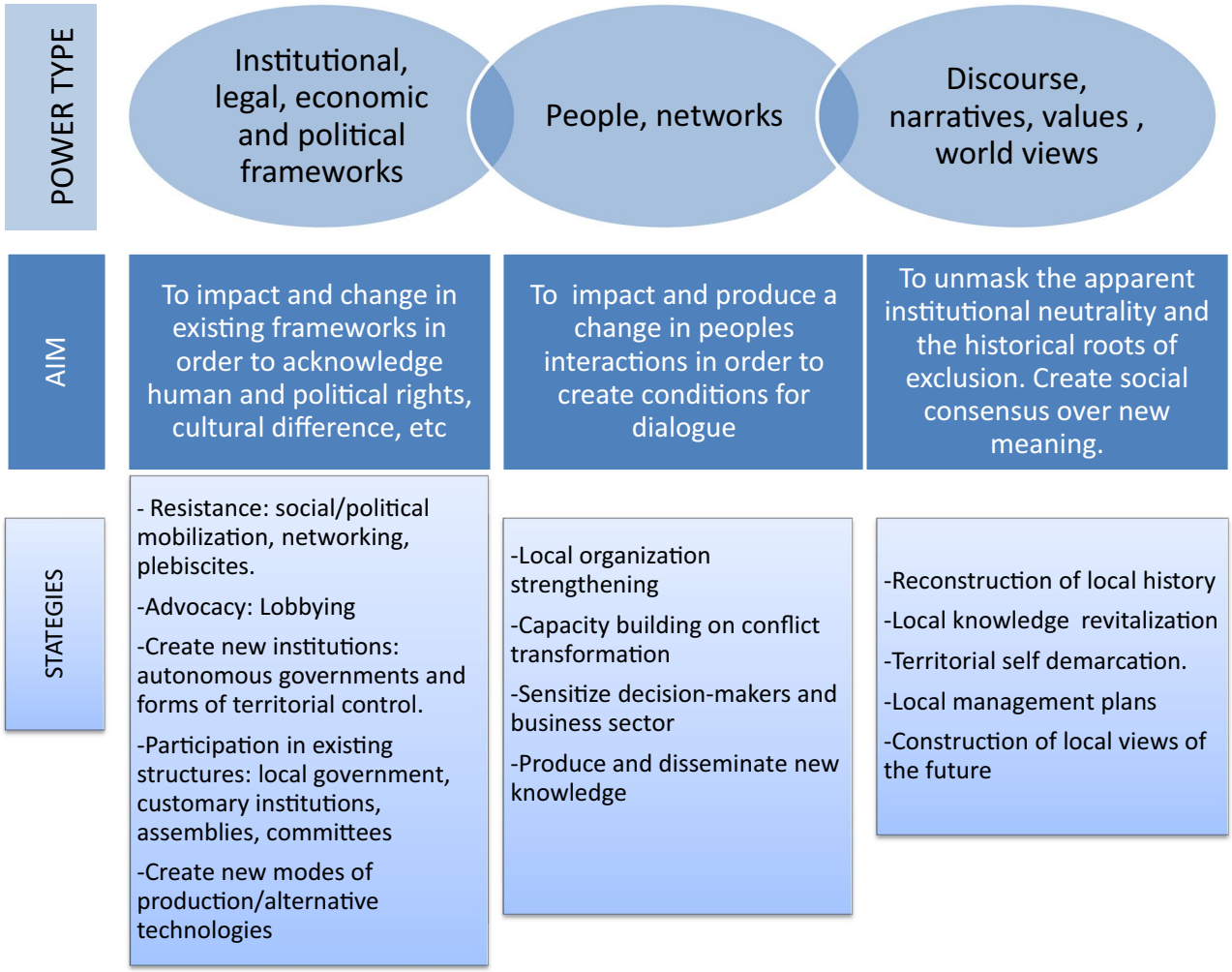

Fig. 1 Strategies to impact on the personal, structural and cultural dimensions of domination. *Source* Rodriguez et al. (2015)

generated through alliances with sectors of the scientific community (Rodriguez et al. 2013). When the research is carried out jointly, additional to the value of knowledge networks helping to reduce and clarify uncertainties regarding environmental change, this strategy has great value in the revitalization of local environmental knowledge. Communities armed with such knowledge can negotiate or discuss the risks of specific projects or activities on their lives with other actors in more equitable conditions (Cappassi 2017). Similarly, public bodies can make decisions or modify environmental policies based on "objective" information.

Impacting on structural power

Resistance movements impact on structural power in different ways. One is through outright confrontation, as we saw above in the example of the Water War; impacting through political and social mobilization on laws, regulations and norms that have been created without consultation or that do not represent the differentiated rights of society. Another way is by activating democratic procedures, such as plebiscites/referenda (Walter and Urkidi 2016). Although effective in the short term, these strategies will not necessarily transform in a profound way institutional structures, unless macro-legal and economic frameworks are impacted on. Another way is by ensuring greater representation of different sectors of society in the formulation of public policy in existing institutions or by creating new institutional arrangements where none exists, such as decision-making councils, co-management committees, roundtables or processes of consultation/prior informed consent. However, co-optation processes become a risk.

In contrast to this affirmative approach, a transformative approach towards public participation processes should be intercultural, where the focus is not to open up participation for marginalized sectors in already-established institutions, but rather to integrate and respect customary decision-making procedures and natural resources

approaches. For example, instruments for territorial planning and management implemented in Bolivia since 2006 such as Indigenous and *Campesino* Territories (TIOCs) not only recognize the ancestral ownership of land to indigenous peoples, but also give them the legal mandate to manage their natural resources autonomously and with respect for their customary decision-making procedures.

Impacting on cultural power

The long-term challenge for many social groups whose worldviews are not represented equally in the dominant ways of knowing the world is to influence and impact on the realm of social representations to protect and defend their own identity, through the creation of new meanings, norms and values. If over time, a sufficient number of people confirm and reaffirm the new meanings through the creation of counter-narratives or counter-discourses, systemic changes in cultural power can take place.

We refer, for example, to dominant views of development, to the way nation-state models define citizenship rights, to dominant climate change or environmental change discourses. Many actors and social movements are creating new social meanings when they position themselves against mining or against infrastructure projects based on their own conceptions of the environment, the land and development (OSAL 2012). In other cases, it is often necessary to begin the process by strengthening local cultural power. This entails raising collective awareness of the problem through processes that can help strengthen local identity. The revitalization of local environmental knowledge and the reconstruction of local history are some of the actions that can help with this. Building visions of the future through community life plans, processes of self-demarcation or local territorial management can also contribute.

In Latin America, there are valuable experiences of recovery of the historical memory of indigenous peoples made by the protagonists themselves, as part of strategies aimed at addressing the dominant model of development and its erosion and erasure of the identity of entire people (Rodriguez 2016; Roroimökok Damük 2010; Palmer 1994).

In socio-environmental conflicts, the reconstruction of local stories may clarify disputes over environment and landscape change, which are commonly and simplistically attributed to local practices (Rodriguez et al. 2014). Thus, re-writing and revisiting history from the local perspective play an important role building environmental counter-narratives and counter-histories, which in turn and with time can help change the collective way of thinking and seeing the environment and environmental change.

Dimensions/spheres of transformation

What changes or what is transformed as a result of the strategies used by EJ movements? How just and sustainable are these transformations?

When redressing an injustice, there is always the potential threat of producing new problematic power relations and re-creating new systems and structures of domination and oppression. In the processes of transformation, initiatives that focus on confronting one dimension of injustice can negatively impact other dimensions. For example, initiatives aiming to increase community control over natural resources through community management can lead to the entrenching of unfair gender relations by transferring power over resource use from women to men. Corporations use "greenwashing", touting how they improve their ecological impact at one scale while continuing to oppress workers and force developmental visions that erase local cultures.

Agarwal (2001) uses the concept of "participatory exclusions" to explain how initiatives such as Community Forest Management aimed at addressing greater participation and more effective resource management through the involvement of local communities can serve to exclude women and other marginalized community members, and as a result can lead to increased inequality as well as a lack of effectiveness of the planned intervention. These exclusions stem from systemic factors, which if unexamined, hinder the potential for truly transformative alternatives to emerge.

Thus, we argue that in analysing transformation, a holistic and integrated perspective on transformation and the multiple dimensions across which transformations occur can serve to support actors to undertake more comprehensive transformations and encourage greater reflexivity to impacts and outcomes of the changes being experienced. Such a comprehensive approach could also improve the way external actors (e.g. researchers, practitioners, governments, NGOs) address and approach social transformation processes. It can also bring attention to the paradox that those who are victims of oppression can also become agents of other forms of oppression.

The following five dimensions/spheres of alternative transformation have been developed in the Vikalp Sangam experience. It is proposed that alternatives are built on the following inter-related, interlocking dimensions/spheres, seen as an integrated whole.

(a) *Ecological integrity and resilience* which includes the conservation of the rest of nature (ecosystems, species, functions, cycles) and its resilience, and respect for ecological limits at various levels, local to global.
(b) *Social well-being and justice* including lives that are fulfilling and satisfactory physically, socially, culturally, and spiritually, where there is equity between com-

munities and individuals in socio-economic and political entitlements, benefits, rights and responsibilities, and where there is communal and ethnic harmony.

(c) *Direct and delegated democracy* where decision-making starts at the smallest unit of human settlement, in which every human has the right, capacity and opportunity to take part, and builds up from this unit to larger levels of governance, and where decision-making is not simply on a 'one-person one-vote' basis but respectful of the needs and rights of those currently disprivileged, e.g. some minorities.

(d) *Economic democracy* in which local communities and individual (including producers and consumers, often combined into one as 'prosumers') have control over the means of production, distribution, exchange, markets, where localization is a key principle, and larger trade and exchange is built on it.

(e) *Cultural diversity and knowledge democracy* in which pluralism of ways of living, ideas and ideologies are respected, and where the generation, transmission and use of knowledge (traditional/modern, including science and technology) are accessible to all.

These five spheres or dimensions overlap in significant ways. Many or most current initiatives may not fulfill all the above. The direction of the alternative transformation process and how these different spheres/dimensions are taken into consideration or not offer valuable information regarding how transformative and radical a certain alternative is. For instance, a producer company that achieves economic democracy but is ecologically unsustainable (and does not care about this), and is inequitable in governance and distribution of benefits (and does not care about this), may not be considered an alternative from a radical perspective. Similarly, a brilliant technology that cuts down power consumption, but is affordable only by the ultra-rich, would not qualify (though it may still be worth considering if it has potential to be transformed into a technology for the poor also).

It should be noted that these five spheres of transformation are based on, and in turn influence, the set of values that individuals and collectives hold, encompassed within their worldviews. These encompass spiritual and/or ethical positions on one's place in the universe, relations with other humans and the rest of nature, identity, and other aspects. For example, the Vikalp Sangam process in India has identified a set of values and principles as crucial parts of transformation which include self-governance/autonomy (*swashasan*/*swaraj*); cooperation, collectivity, solidarity and 'commons'; rights with responsibilities; the dignity of labour (shram) and livelihoods as ways of life (*jeevanshali*); respect for subsistence and self-reliance (*swavalamban*); simplicity and sufficiency (*aparigraha*); respect for all life forms (*vasudhaiv kutumbakam*); non-violence (*ahimsa*); reciprocity, and pluralism and diversity, just to take some examples (Kothari 2016).

Scales and transformations

Transformation processes entail complex scalar dynamics which structure political action and outcomes (Staeheli 1994; Kurtz 2003). Key questions when examining scalar considerations include: how do transformations at one scale impact others across scales? How do processes of transformation, the building of alternatives and the stitching together of new forms of governance/production/being diffuse and translate across space? Finally, can we consider something transformative if change is confined to the very local or small scale (even down to the family unit or to individual experience), or must transformation entail an increasing sphere of influence? In this section, we refer to three key scalar dynamics at play when examining EJ movement and community-led transformation processes: spatial scales, temporal scales and human/societal scales.

The multi-level perspective, an analytical framework for conceptualizing sustainability transitions, looks at the development of green niches struggling against existing (unsustainable) systems, and potentially replacing or reconfiguring these systems when they are able to "take-off" or through mass diffusion (Geels and Schot 2007). This literature has focused primarily on the development and uptake of technical green innovations (such as organic food, electric vehicles and wind turbines). But we would argue that innovative forms of contentious politics and the new governance approaches and institutions that emerge from them should also be viewed as niches that hold transformative potential, particularly, as they are transmitted from place to place. Such contentious politics should not be overlooked as it has been sustained that transformations related to emergent and unruly political alignments achieve the most profound (and often rapid) radically progressive social changes (Stirling 2015).

For example, new repertoires of action and mobilization practices, such as those power strategies discussed in Sect. "Background: situating ourselves and the research" are often diffused from location to location. The way such transformative experiences move across scales is complex and surprising.

Let us take, for an example, community-led consultations/referenda against metal mining activities in Latin America, which were diffused as a key strategy through social movements and anti-mining networks. These consultations/referenda have managed to successfully stop or ban mining activities or to change local, provincial or national regulations in many contexts (Walter and Urkidi 2016). Yet we see how a process that began in one locality can become the

source of a radical transformation in others. Sipakapa (Guatemala) (EJAtlas 2017a, b, c, d), inspired by Tambogrande (EJAtlas 2014), was the third community mining consultation in Latin America. In Sipakapa, the mobilization and consultation did not succeed in stopping the mining project, but more communities learned and were inspired by this experience. Between 2005 and 2012, more than 600,000 indigenous and non-indigenous people in Guatemala have exercised their democratic right to a say over their lands and communities, leading to significant empowerment of indigenous communities and organizations in a country with a long experience of marginalization and repression against them (Walter and Urkidi 2016). Such consultation processes have allowed numerous communities to reclaim their rights and lands and have also triggered institutional and regulatory changes (mining moratoria and bans in Argentina provinces, land planning changes in Peru, etc).

The Vikalp Sangam process described above is an initiative that aims to contribute to the sharing and replication of this type of transformative experience and local-scale institutional innovation. The emphasis is on outscaling alternative initiatives, rather than upscaling them. In the latter, a single initiative attempts to become bigger and bigger, often leading to the replication of bureaucratic, top-down structures that defeat the principles of democracy that the initiative may have started with, whereas in the former, different actors and organisations and communities learn from each other, absorb the key principles and processes, and attempt transformations in their own areas and sectors mindful of local/sectoral particularities. The focus of the multi-level perspective on vertical uptake can overlook this type of horizontal transmission of transformation.

Regarding temporal scales, the dynamic and contingent nature of transformation and the methodological challenges to capture these non-linear processes must be highlighted. What initially might seem a radical transformative process might be lost in time due to both internal or external drivers, such as state cooptation or/and repression, or inter/intra-community conflicts. On the other hand, a transformative experience can be triggered as a result of a failure or a tragic circumstance.

El Salvador, a fervent promoter of mining activities in the 1990s, recently banned metal mining. This shift began with the escalation of resistance of a few community members in Cabañas to the exploration activities of the Pacific Rim Company and the El Dorado mining project (EJatlas 2017a, b, c, d) leading to the deaths of four anti-mining activists. These deaths sparked the growth of a national movement against mining (the Mesa) which was able to mobilize this growing anti-mining sentiment into an effective political force. Meanwhile, an international dispute arbitration case filed by the Canadian-Australian company, OceanaGold, which finally rejected OceanaGold's claims for $258 million compensation against El Salvador for not granting the company the mining permit, also highlighted the question of sovereignty.

The law banning mining, approved in 2017, is the first of its kind in the world and strengthens the claims of communities opposing large mining projects in the region and the world. It questions mining as an engine of development. It has further emboldened Salvadorean activists to create transnational alliances with anti-mining activists in Honduras and Guatemala to resist 49 extractive projects that threaten transborder river contamination and to mobilize trans-nationally to eliminate "investor-state" clauses from trade and investment treaties, which strangle countries' ability to safeguard their environment and allow foreign investors to hijack local democracy. This example highlights how temporal, spatial and human (addressed as follows) scales articulate in social transformation processes.

A scalar perspective can restore agency to grassroot movements, emphasizing how movements of resistance from below act as agents for transformative change, something that has remained poorly understood until the present. For example, Berkhout et al. (2004) argue that environmental groups tend to engage through overtly political action directed towards policy-makers at the macro-level, writing: "Rather than create sustainable niches from below, environmentalists have lobbied, boycotted, occupied, demonstrated and undertaken 'direct action'. Activists have sought to seed transformations from *above*" (p. 60). This perspective fails to adopt a necessary historical understanding of how place-based environmental movements form, evolve and lead to outcomes. Movements often begin to coalesce due to specific moments, or "eventful events" (Della Porta 2008). For environmental racism and anti-toxic movements, this includes events such as Warren County (EJAtlas 2015b) and Love Canal (EJAtlas 2016c) that led to the formation of the EJ movement in the US. Meanwhile, disasters such as Bhopal, the Ogoni movement in the Niger Delta and the Chevron Texaco disaster in Ecuador are key moments in an upsurge of activism and new forms of transnational coalitions dedicated to anti-toxic and climate justice activism (Zavestoki 2014). The historical and multi-scalar perspective offered by the EJAtlas can offer an enhanced understanding of transformation from below to above and in the long durée.

Finally, transformations can occur at the single individual level (as in a shift in worldviews), to the social movements, communities or societal levels and the interrelations between them. We refer to this as the human or societal scale of transformation. The transformation of human behavior is considered to be an essential part of transitions and transformations to global sustainability (Gifford 2011; Swim et al. 2011). O'Brien and Sygna (2013) highlight the relevance of what they define as the personal sphere in transformation processes. The personal sphere considers the individual and

collective beliefs, values and worldviews that shape the ways that the systems and structures (the political institutions) are perceived, and affects what types of solutions are considered "possible".

In one way, we may say that the personal level of transformation is what provides the building blocks for group and societal transformation. However, it is common for those sharing personal experiences that transform them to talk about realization that occurred through collective action. For example, protest is not only a lever in processes of transformation, it also develops transformative capacity, including solidarity, social capital and forms of collective identity and knowledge that are immensely productive and which create indispensable resources and relations towards further transformation (Della Porta 2008). This has also been termed the "political productivity" of conflicts (Merlinsky and Latta 2012).

Protests have cognitive, affective and relational impacts on the individuals and movements that carry them out. Meanwhile, street actions, blockades and occupations create arenas where communities are formed and where social, ecological and democratic experimentation are able to take place. The EJAtlas highlights many cases where new solidarities have been formed behind the barricades such as the TAV conflict in Italy (Greyl et al. 2012; Della Porta 2008) and the ZAD in France (EJAtlas 2016b). Individual subjectivities are also created through collective identity formation and relations as well as through the material practices of engagement with nature. Singh (2013) points to the forming of subjectivities through daily caring for forests in Odisha, India, and how this was mobilized for community cooperation and communication, leading to a deepening of these environmental subjectivities and of their bio-political potential to create new forms of being and new visions for forest–people relations.

Discussion: a framework for understanding movements of resistance as agents of transformative change

Here we have provided a framework that can (1) help analyze and recognize the contribution of grassroots EJ movements to societal transformations to sustainability and (2) support and aid radical transformation processes.

We suggest that the concepts and considerations we have outlined here can support a deeper understanding of the contribution of EJ movements to societal transformations to sustainability. This should be prefaced by the assertion that capturing the outcomes of everyday and grassroots activism is notoriously difficult. As Rebecca Solnit (2017) argues in her essays about hope, while every movement and experiment may engender "spinoffs, daughters, domino effects, chain reactions, new models and examples and templates" that can be applied to other situations and struggles, the ripple effects set off by these are seldom, and may be impossible to trace back. Further, there are also backlashes, breaking points, and mutations that obscure even further the chains of causation. Nonetheless, the difficulty of tracking the trajectory of such transformations should not lead us to discount and dismiss the agency of movements from below and to give credit for transformations to the powerful actors who publicly call the shots.

We suggest that the focus on conflict, resistance and alternatives and the dimensions and elements of transformation we have outlined here: (1) forms of power (2) dimensions of change and (3) scales of transformation can provide a new framework for situating the agency of EJ activists and how these lead to alternatives. By combining the three we may characterize and map these movements and the dimensions, scales and power structures they are focused towards transforming.

For example, bringing our attention to "people power"—relational and associational power—we can establish how social connections and the building of networks lead to transformative change. This includes "connecting of the dots" between disparate movements to form stronger alliances. It also includes increasing intersectionality and broadening of struggles through the integration of multiple dimensions, through combining ecological concerns with social, economic and cultural ones. For example, local struggles against fracking/wind farms, etc. move to an understanding of the broader industrial energy system, climate justice and rethinking how energy can be produced and managed at local scales (Avila 2018, this issue, del Bene et al. this issue).

Regarding institutional power, we have highlighted how institutions for organizing, and alternatives for commoning and for doing and being differently are transmitted across scales vertically and horizontally—this may include consultations/referendums, as well as new strategies for direct action or new local approaches to governing the commons. We suggest these innovations as significant as technological advances in transformations and need to be better studied.

Finally, a focus on discursive power elucidates how social movements create narratives and frames that disrupt the status quo, destabilize the system and eventually yield profound social, political and environmental change.

By linking conflicts and alternatives, we can better understand the interconnections between these various ways of impacting on power and how movements move from defensive to pro-active actions. For example, new forms of direct democracy (institutional power) emerge through processes of organizing (relational power). Meanwhile, new and reclaimed cultural values are re-affirmed in contrast to those being opposed through collective action. These reclaimed

cultural values and ways of being are alternatives, even though they are not new.

While transition literature tends to focus on artifacts and technologies that may lead to a carbon-efficient future such as solar panels and thus tends to focus on one dimension (environmental) at the expense of others—we suggest that a resistance-centred perspective encompasses multiple dimensions of transformation and focuses on the creation of new subjectivities, power relations, values and institutions. This recenters the agency of those who are engaged in the creation and recuperation of ecological and new ways of being in the world that are sustainable.

Instead of asking "How can institutional innovations contribute to addressing power inequalities and allowing actors who are poorly represented to participate?" (Patterson et al. 2015:21) we would counter that institutional actors need to recognize the actions and proposals being put forward by the marginalized and sub-altern and allow them to participate on their own terms. This entails a recognition of the transformative potential of "politics of refusal" (Simpson 2014) and acknowledgment that movements of resistance are not against development—they are for alternatives and other ways of being.

Movements put pressure from the outside, at the same time as they innovate and create alternatives from the inside, in a mutually reinforcing process where conflict fuels energy and creativity. Socio-political struggles that confront hegemonic and incumbent power including corporate state alliances on fossil fuels, mining and other polluting industries are a key factor in regime destabilization (Geels 2010) which then open the door for the alternatives that movements are cultivating to emerge. An appreciation of how this force and energy of conflict can be harnessed for creating new knowledge, social learning, increased democratic engagement, and the creation of stronger and more cohesive publics should lead to a greater embrace of movements of resistance as positive forces for change and those who are putting forward the most holistic vision of a sustainable just future.

The conceptual framework offered here is also designed to be used by communities engaged in deliberate processes of opposition and transformation, and we aim to further develop methodologies, including art-based and creative approaches that can extend these frameworks and adapt their use for community purposes so they can be used as tools for reflexivity. A holistic and integrated perspective on transformation and the multiple dimensions across which transformations are needed can serve to support actors to undertake more comprehensive transformations and greater reflexivity to impacts and outcomes of the changes being experienced. Within ACKnowl-EJ, our first application of these frameworks is to test them and apply them together with communities working on intentional power transformations. Within our case studies, we aim to analyze processes of transformation together with the communities as a way to strengthen their processes and enhance reflexivity. Tools include participatory power analysis, as well as application of two frameworks we are developing to track processes of transformation.

For example, through a set of *Conflict Transformation Indicators*, we aim to assess how and when a transformative conflict is moving towards a situation of greater justice. The pillars for the conflict transformation against which the indicators are developed are cultural revitalization, recognition of cultural difference and rights, dialogues of knowledge, increased political participation, equitable distribution of harms and benefits from the environment, diversification/and increased local control of means of production and technology, strengthening of environmental institutions and governance structures, and enhancing environmental integrity. The indicators will be used and tested in ACKnowl-EJ in some of our project case studies.

ACKnowl-EJ has also developed and is now testing, following the experience of the Vikalp Sangam experience, an *Alternatives Transformation Framework* that aims to gain more in-depth understanding of alternative transformations in political, economic, social, cultural and ecological fronts, and of the worldviews that underlie or inform such transformations. Such a framework could be used for the following purposes: (a) to distinguish amongst the transformative and reformist initiatives or false solutions, i.e. those that claim to be transformative but are only strengthening the status quo such as predominantly market-based or technology-based mechanisms; (b) to gain in-depth understanding of the process of transformation; (c) to help understand if there are internally contradictory trends in transformation; and (d) through all this, to enable the actors in the initiative to take steps towards a more comprehensive transformation.

Finally, the approach such as the one proposed here can serve to understand the specific dynamics of the transformative and emblematic cases currently featured in the EJAtlas. A historical comparative and multi-scalar perspective of transformative cases from the atlas will shed light into the conditions under which radical alternatives emerge and flourish.

Conclusion

This article has made the case for a radical approach to transformation that recognizes the agency of EJ movements and aims to work together with them through active and activist scholarship to support transformation. It aims to contribute to re-center movements of environmental resistance as revolutionary and radical agents of change towards transformation. A radical transformation to sustainability implies one based on values and ideologies that overtly reject hegemonic

economic and political practices, that aims to confront and subvert hegemonic power relations, that is multi-dimensional and intersectional, balancing ecological concerns with social, economic, cultural and democratic spheres.

Finally, a radical transformation holds the potential to move from the local scale, from "militant particularism" (Harvey and Williams 1955) towards a more transcendent and emancipatory global environmental justice movement. While local movements may decide to focus on the local and for deepening rather than broadening, initiatives and struggles often share common threads, and similar underlying values and worldviews. These common values can potentially serve as a bridge on the basis of which solidarities can be built to support individual and collective struggles, and can inform the creation of a vision and imaginary towards the needed radical transformation.

Acknowledgements This work is based on research supported through the Transformations to Sustainability (T2S) Programme coordinated by the International Social Science Council (ISSC) and funded by the Swedish International Development Cooperation Agency (Sida). We would like to thank Adrian Martin, Daniela del Bene, Joan Martinez Alier, Arnim Scheidel, Mirna Liz Inturias, Begum Özkaynak, Neema Pathak Broome, Radhika Mulay, Meenal Tatpati, Shruti Ajit, Shrishtee Bajpai, Rania Masri, Cem İskender Aydın, Lena Weber as well as three anonymous reviewers from this journal for their valuable contributions to the paper.

References

Agarwal B (2001) Participatory exclusions, community forestry, and gender: an analysis for South Asia and a conceptual framework. World Dev 29(10):1623–1648

Angel J (2017) Towards an energy politics in-against-and-beyond the state: Berlin's struggle for energy democracy. Antipode 49(3):557–576

Asara V, Otero I, Demaria F, Corbera E (2015) Socially sustainable degrowth as a social–ecological transformation: repoliticizing sustainability. Sustain Sci 10(3):375–384

Avila (2018) Wind energy conflicts: analyzing disputes over sustainable futures **(This issue)**

Bachrach P, Baratz MS (1962) Two faces of power. Am Polit Sci Rev 56(4):947–952

Berkhout F, Smith A, Stirling A (2004). Socio-technical regimes and transition contexts. In Elzen B, Geels FW, Green K (eds) System innovation and the transition to sustainability: theory, evidence and policy. Edward Elgar Publishing, Cheltenham

Bond P (2012). Politics of climate justice. paralysis above, movement below. University of KwaZulu-Natal Press, Scottsville

Borras SM Jr, Edelman M, Kay C (2008) Transnational Agrarian movements confronting globalization. Wiley-Blackwell, Oxford

Botes J (2003) Conflict Transformation: A debate over semantics or a crucial shift in the theory and practice of peace and conflict Studies?. Int J Peace Stud 8(2):1–27

Cappassi C (2017) Community-based monitoring to end oil contamination in the Peruvian Amazon. Perspectives, No. 26. UN Environment's Civil Society Unit. http://wedocs.unep.org/bitstream/handle/20.500.11822/22185/Perspective_No_26_web%20%281%29.pdf?sequence=1&isAllowed=y. Accessed 10 Jan 2017

Chatterton P (2016) Building transitions to post-capitalist urban commons. Trans Inst Br Geogr 41(4):403–415

Chatterton P, Featherstone D, Routledge P (2013) Articulating climate justice in Copenhagen: antagonism, the commons, and solidarity. Antipode 45(3):602–620

Crespo C (2005) La negociación como dispositivo para reducir relaciones de dominación. Aspectos conceptuales y metodológicos. In: Correa H, Rodríguez I (eds) Encrucijadas Ambientales en América Latina. Entre el manejo y la transformación de conflictos por recursos naturales. Universidad para la Paz, Costa Rica

Daga S (2014) All the way to Timbaktu. Anveshan, 28 October. http://kalpavriksh.org/images/alternatives/AllthewaytoTimbuktuProjectAnveshan.pdf. Accessed 10 Jan 2018

Del Bene D, Scheidel A, Temper L (2018) More dams, more violence? a global analysis of resistance, repression and violence around dams. Sustain Sci **(under review)**

Della Porta DD (2008) Eventful protest, global conflicts. Distinktion Scand J Soc Theory 9(2):27–56

Dukes EF (1996) Resolving public conflict. Transforming community and governance. Manchester University Press, Manchester

Edelman M (2001) 'Social movements: changing paradigms and forms of politics'. Annu Rev Anthropol 30:285–317

EJAtlas (2014) Tambogrande, Peru. Atlas of EJ. https://ejatlas.org/conflict/tambogrande-peru. Accessed 26 April 2017

EJAtlas (2015a) Cochabamba Water Water, Bolivia. http://ejatlas.org/conflict/cochabamba-water-war-bolivia. Accessed 2 June 2017

EJAtlas (2015b) PCB Contamination in Warren County, USA. http://ejatlas.org/conflict/pcb-contamination-in-warren-county-usa. Accessed 2 June 2017

EJAtlas (2016a) Meridian Gold Mine in Esquel, Argentina. Atlas of EJ. https://ejatlas.org/conflict/esquel-meridian-gold-mine-argentina. Accessed 26 April 2017

EJAtlas (2016b) ZAD at Notre-Dame-des-Landes, Aeroport du Grand Ouest, France. http://ejatlas.org/conflict/zad-at-notre-dame-des-landes-aeroport-du-grand-ouest-france. Accessed 2 June 2017

EJAtlas (2016c) Love Canal Dump Site at Niagara Falls, USA. http://ejatlas.org/conflict/love-canal-niagara-falls-usa. Accessed 2 June 2017

EJAtlas (2017a) Marlin, Guatemala. Atlas of EJ. https://ejatlas.org/conflict/marlin-guatemala. Accessed 26 April 2017

EJAtlas (2017b) Intag mining, Junin, Ecuador. Atlas of EJ. http://ejatlas.org/conflict/intag-junin-ecuador. Accessed 26 April 2017

EJAtlas (2017c) Native American´s Sioux against the Dakota Access Pipeline (DAPL), USA. http://ejatlas.org/conflict/dakota-access-pipeline. Accessed 2 June 2017

EJAtlas (2017d) Lignite mining and the Ende Gelände movement, Germany. http://ejatlas.org/conflict/linginte-mining-and-the-ende-gelande-movement. Accessed 2 June 2017

Ely A, Smith A, Stirling A, Leach M, Scoones I (2013) Innovation politics post-Rio + 20: hybrid pathways to sustainability? Environ Plan C Govern Policy 31(6):1063–1081

Escobar A (2015) Degrowth, post-development, and transitions: a preliminary conversation. Sustain Sci 10(3):451–462

Feola G (2015) Societal transformation in response to global environmental change: a review of emerging concepts. Ambio 44(5):376–390

Figueroa RM (2006) Evaluating EJ claims. In: Bauer J (ed) Forging environmentalism: justice, livelihood, and contested environments. East Gate Book, M.E. Sharpe, Armonk, London, pp 360–376

Fisher R, Ury W (1981) Getting to yes. Houghton Mifflin, Boston

Foucault M (1971) The order of discourse in young. In: Robert (ed) Untying the Text: A Poststructuralist Reader. Routledge and Kegan Paul, London

Fraser N (1995) Recognition or redistribution? A critical reading of Iris Young's Justice and the Politics of Difference. J Polit Philos 3(2):166–180
Future Earth (2014) Strategic Research Agenda 2014: Priorities for a Global Sustainability Research Strategy. International Council for Science (ICSU), Paris
Gadgil M, Guha R (1993) This fissured land: an ecological history of India. Univ of California Press, Berkeley
Galtung J (1990) Cultural violence. J Peace Res 27(3):291–305
Gaventa J (1980) Power and powerlessness: quiescence and rebellion in an Appalachian valley. University of Illinois Press, Chicago
Geels FW (2006) The hygienic transition from cesspools to sewer systems (1840–1930): The dynamics of regime transformation. Res Policy 35(7):1069–1082
Geels FW (2010) Ontologies, socio-technical transitions (to sustainability), and the multi-level perspective. Res Policy 39(4):495–510
Geels FW, Schot J (2007) Typology of sociotechnical transition pathways. Res Policy 36(3):399–417
Gibson-Graham JK (2006) A postcapitalist politics. University of Minnesota Press, Minneapolis
Gibson-Graham JK (2008) Diverse economies: performative practices for 'other worlds'. Prog Hum Geogr 32(5):613–632
Gifford R (2011) The dragons of inaction: psychological barriers that limit climate change mitigation and adaptation. Am Psychol 66(4):290–302
Gillard R, Gouldson A, Paavola J, Van Alstine J (2016) Transformational responses to climate change: beyond a systems perspective of social change in mitigation and adaptation. Wiley Interdiscip Rev Clim Change 7(2):251–265
Gorz A (1967) Strategy for labor. Beacon Press, Boston
Greyl L, Healy H, Leonardi E, Temper L (2012) Stop that train! Ideological conflict and the TAV. Econ Policy Energy Environ 2:193–218
Grin J, Rotmans J, Schot J (2010) Transitions to sustainable development: new directions in the study of long term transformative change. Routledge, New York, London
Hardt M, Negri A (2017) Assembly. Oxford University Press, Oxford
Harvey D (2011) The enigma of capital: and the crises of capitalism. Oxford University Press, New York
Harvey D, Williams R (1995) Militant particularism and global ambition: the conceptual politics of place, space, and environment in the work of Raymond Williams. Soc Text 42:69–98
Johnstone P, Newell P (2017) Sustainability transitions and the state. Environmental innovation and societal transitions. https://doi.org/10.1016/j.eist.2017.10.006
Jørgensen U (2012) Mapping and navigating transitions—the multi-level perspective compared with arenas of development. Res Policy 41(6):996–1010
Kothari A (2014) Radical ecological democracy: a path for India and beyond. Development 57(1):36–45
Kothari A (2016) The search for radical alternatives: Key elements and principles, Counter Currents. http://www.countercurrents.org/2016/11/03/the-search-for-radical-alternatives-key-elements-and-principles/
Kothari A, Demaria F, Acosta A (2014) Buen Vivir, Degrowth and Ecological Swaraj: Alternatives to sustainable development and the Green Economy. Development 57:362. https://doi.org/10.1057/dev.2015.24
Kurtz HE (2003) Scale frames and counter-scale frames: constructing the problem of environmental injustice. Polit Geogr 22:887–916. https://doi.org/10.1016/j.polgeo.2003.09.001
Leach M, Scoones I (2015). Mobilizing for Green Transformations In: Scoones I, Leach M, Newell P (eds) The Politics of Green Transformations. Routledge, Oxon, pp 119–132
Lederach JP (1995) Preparing for peace: conflict transformation across cultures. Syracuse University Press, Syracuse
Long N, Van Der Ploeg JD (1989) Demythologizing planned intervention: an actor perspective. Sociol Ruralis 29(3/4):226–249
Lukes S (1974) Power: a radical view. Macmillan, London, New York
Mansbridge JJ, Morris A (2001) Oppositional consciousness: the subjective roots of social protest. University of Chicago Press, Chicago
Martinez-Alier J, O'Connor M (1996) Ecological and economic distribution conflicts. In: Costanza R, Martinez-Alier J, Segura O (eds) Getting down to Earth. Practical Applications of Ecological Economics. Island Press/ISEE, Washington, DC
Martinez-Alier J, Temper L, Del Bene D, Scheidel A (2016) Is there a global environmental justice movement? J Peasant Stud 43(3):731–755
McAdam D (2010) Political process and the development of black insurgency, 1930–1970. University of Chicago Press, Chicago
Merlinsky MG, Latta A (2012) Environmental collective action, justice and institutional change in Argentina. Environment and citizenship in Latin America: natures, subjects and struggles. Berghahn, New York, pp 190–208
Monedero JC (2009) El gobierno de las palabras. Fondo Cultural Económico, Madrid
Moser SC (2016) Can science on transformation transform science? Lessons from co-design. Curr Opinion Environ Sustain 20:106–115
O'Brien K, Sygna L (2013) Responding to climate change: the three spheres of transformation. In: Proceedings of Transformation in a changing climate. University of Oslo, Oslo, pp 16–23
Olsson P, Galaz V, Boonstra WJ (2014) Sustainability transformations: a resilience perspective. Ecol Soc 19(4):1. https://doi.org/10.5751/ES-06799-190401
OSAL (2012) Numero Especial de la Revista del Observatorio Social de América Latina (OSAL) sobre Movimientos socio-ambientales en América Latina. Año XIII No 32—Noviembre de 2012. Disponible en linea. http://biblioteca.clacso.edu.ar/clacso/osal/20120927103642/OSAL32.pdf
Palmer P (1994) Self-history and Self-identity in Talamanca. En: Kleymeyer Charles David (Ed.) Cultural Expression and Grassroots Development. Cases from Latin America and the Caribbean. Lynne Riener Publishers, Inc, Colorado
Patel R (2009) Food sovereignty. J Peasant Stud 36(3):663–706
Patterson J, Schulz K, Vervoort J, Adler C, Hurlbert M, van der Hel S, Schmidt A, Barau A. Obani P, Sethi M, Hissen N (2015) 'Transformations towards sustainability' Emerging approaches, critical reflections and a research agenda. Earth System Governance Working Paper, p 33
Patterson JJ, Thaler T, Hoffmann M, Hughes S, Oels A, Chu E, Mert A, Huitema D, Burch S, Jordan A (2018) Political feasibility of 1.5 °C societal transformations: the role of social justice. Curr Opinion Environ Sustain 31:1–9
Pelling M (2011). Adaptation to climate change: from resilience to transformation. Routledge, Abingdon
Pelling M (2012) Resilience and transformation. pg. 51–65. In: Pelling M, Manuel-Navarrete D, Redclift M (eds) Climate change and the crisis of capitalism: a chance to reclaim self, society and nature. Routledge, Oxford
Pelling M, O'Brien K, Matyas D (2015) Adaptation and transformation. Clim Change 133(1):113–127
Pugh J (2009) What is radical politics today? What is Radical Politics Today? Palgrave Macmillan, pp 1–13
Quezada JR (1990) Historia Oral en Costa Rica. Génesis y estado actual. Estudios sobre las culturas contemporáneas 3(9):173–197
Robbins P (2004) The Hatchet and the Seed. In: Political Ecology: A Critical Introduction,, ed. Anonymous. Blackwell Publishing Ltd., pp 3–16
Rodriguez I (2016) Historical reconstruction and cultural identity building as a local pathway to "Living Well" amongst the Pemon

of Venezuela. In: White S, Blackmore C (eds) Cultures of wellbeing. Method, place and policy. Palgrave MacMillan, Hampshire
Rodriguez I, Sletto B, Bilbao B, Sánchez-Rose I, Leal A (2013b) Speaking of fire: reflexive governance in landscapes of social change and shifting local identities. J Environ Policy Making Plan. https://doi.org/10.1080/1523908X.2013.766579
Rodriguez I, Gasson R, Butt-colson A, Leal A, Bilbao B (2014) Ecología Histórica de la Gran Sabana (Estado Bolívar, Venezuela) entre los siglos XVIII y XX. En: Rostain Stephen (ed) Antes de Orellana. Actas del III Encuentro Internacional de Arqueología Amazónica, Instituto Francés de Estudios Andinos, Facultad Latinoamericana de Ciencias Sociales, Embajada de EEUU, Quito, Ecuador
Rodriguez I, Inturias ML, Robledo J, Sarti C, Borel R, Melace AC (2015) Abordando la Justicia Ambiental desde la transformación de conflictos: experiencias con Pueblos Indígenas en América Latina. Revista de Paz y Conflictos 8(2):97–128
Roelvink G, Martin KS, Gibson-Graham JK (2015). Making other worlds possible. University of Minnesota Press, Minnesota
Roroimökok Damük (Nosotros la gente del Roraima) (2010) La Historia de los Pemon de Kumarakapay. In: Rodríguez I, Gómez J, Fernández Y (eds) Instituto Venezolano de Investigaciones Científicas, Fundación Futuro Latinoamericano, Inwent y Forest Peoples Programme. Ediciones IVIC. Caracas, Venezuela, p 124
Rotmans J, Kemp R, van Asselt M (2001) More evolution than revolution: transition management in public policy. Foresight 3:15–31. https://doi.org/10.1108/14636680110803003
Routledge P, Cumbers A, Derickson KD (2018) States of just transition: Realising climate justice through and against the state. Geoforum 88:78–86
Sandoval C (2000) Methodology of the oppressed (vol 18). Univeristy of Minnesota Press, Minnesota
Scheidel A, Temper L, Demaria F, Martínez-Alier J (2017) Ecological distribution conflicts as forces for sustainability: an overview and conceptual framework. Sustain Sci. https://doi.org/10.1007/s11625-017-0526-1
Scoones I (2016) The politics of sustainability and development. Annu Rev Environ Resour 41:293–319
Scoones I, Leach M, Newell P (2015) The politics of green transformations. Routledge, Abingdon
Scoones I, Edelman M, Borras SM Jr, Hall R, Wolford W, White B (2017) Emancipatory rural politics: confronting authoritarian populism. J Peasant Stud 45:1–20
Shove E, Walker G (2007) CAUTION! Transitions ahead: politics, practice, and sustainable transition management. Environ Plan A 39(4):763–770
Sikor T, Newell P (2014) Globalizing environmental justice? Geoforum 54:151–157. https://doi.org/10.1016/j.geoforum.2014.04.009
Simpson A (2014) Mohawk interruptus: political life across the borders of settler states. Duke University Press, Durham
Singh NM (2013) The affective labor of growing forests and the becoming of environmental subjects: rethinking environmentality in Odisha, India. Geoforum 47:189–198
Smith A, Ely A (2015) Green transformations from below? The politics of grassroots innovation. In: Scoones I, Leach M, Newell P (eds) The politics of green transformations. Routledge, Oxon, pp 102–118
Solnit R (2017) The Guardian. Protest and persist: why giving up hope is not an option. https://www.theguardian.com/world/2017/mar/13/protest-persist-hope-trump-activism-anti-nuclear-movement
Staeheli L (1994) Empowering political struggle: spaces and scales of resistance. Polit Geogr 13(5):387–391
Stirling A (2015) Emancipating transformation: from controlling 'the Transition' to Culturing Plural Radical Progress. In: Scoones I, Leach M, Newell P (eds) The Politics of Green Transformations. Routledge, Oxon, pp 54–67
Swim JK, Stern PC, Doherty TJ, Clayton S, Reser JP, Weber EU, Gifford R, Howard GS (2011) Psychology's contributions to understanding and addressing global climate change. Am Psychol 66(4):241–250
Temper L (2018) From boomerangs to minefields, catapults and cushions: dynamics of trans-local resistance to land grabs. J Peasant Stud. https://doi.org/10.1080/03066150.2017.1398144
Temper L, Del Bene D (2016) Transforming knowledge creation for environmental and epistemic justice. Curr Opinion Environ Sustain 20:41–49
Temper L, Martinez-Alier J (2017) 'Mapping ecologies of resistance' In: Horowitz LS, Watts MJ (eds) Grassroots environmental governance: Community engagements with industrial development. Taylor & Francis Books, London
Temper L, del Bene D, Martinez-Alier J (2015) Mapping the frontiers and front lines of global EJ: the EJAtlas. J Polit Ecol 22:255–278
Thekaekara MM (2015) What an idea! The Hindu Sunday Magazine, 28 March. http://www.vikalpsangam.org/article/what-an-idea/
Ury WL, Brett JM, Goldeberg SB (1988) Getting disputes resolved: designing systems to cut the costs of conflict. Jossey-Bass, San Francisco
Van Renssen S (2016) Courts take on climate change. Nat Clim Change 6:655–656
Walter M, Urkidi L (2016) Community mining consultations in Latin America (2002–2012): The contested emergence of a hybrid institution for participation. Geoforum. https://doi.org/10.1016/j.geoforum.2015.09.007
Walter M, Latorre Tomás S, Munda G, Larrea C (2016) A social multicriteria evaluation approach to assess extractive and non-extractive scenarios in Ecuador: Intag case study. Land Use Policy 57:444–458
Westley F, Olsson P, Folke C, Homer-Dixon T, Vredenburg H, Loorbach D, Thompson J, Nilsson M, Lambin E, Sendzimir J, Banarjee B, Galaz V, van der Leeuw S (2011) Tipping toward sustainability: emerging pathways of transformation. AMBIO 40:762–780. https://doi.org/10.1007/s13280-011-0186-9
Young I (1990) Justice and the politics of difference. Princeton University Press, Princeton
Zavestoki S (2014) The struggle for justice in Bhopal. A new/old breed of transnational social movement. In: Armiero M, Sedrez L (eds) A history of environmentalism: local struggles, global histories. Bloomsbury, London, New York, pp 129–146