

25 Navigating the Spaciousness of Uncertainties Posed by Global Challenges

A Senses of Place Perspective

Lynne C. Manzo, Daniel R. Williams, Christopher M. Raymond, Andrés Di Masso, Timo von Wirth and Patrick Devine-Wright

We opened this volume with sobering stories of the dire global challenges before us. Indeed, one would not be hard pressed to find stories of the urgency of our various environmental and social crises. While we wrote this book, the COVID-19 pandemic raged, towns in the Arctic reached unprecedented temperatures, countless hectares of forests fell while fossil fuels continued to be violently extracted from the earth, and Black, Indigenous and people of colour continued to be exploited and oppressed. Yet, despite all this, or rather because of it, we wish to begin our conclusion with hope and determination. Drawing on Solnit (2016), we believe that there is a spaciousness in the uncertainties posed by the challenges before us in that they offer new possibilities for being, thinking and acting – for renewal and purposeful redirection in our trajectory – and it is through a reawakened awareness of our rich and dynamic relationships to place that we can find a better way forward.

This book was motivated by the goal of elevating senses of place as a critical way to navigate global challenges. The multiple and constitutive aspects of senses of place addressed in this volume demonstrate the need to broaden existing conceptualisations of this pivotal construct. In this text, we have problematised and pluralised senses of place, defining it as *the plurality of place-related meanings, interpretations and values continuously produced, contested, negotiated, reconstructed and embodied by individuals and collectives of people* (see the Introduction for a more detailed exploration of the construct). We have presented novel perspectives on how key global challenges such as ecological regime shifts, migration and mobility, intensive urban change, technological and legal transformations, growing nationalism and competing territorial claims interconnect with our senses of place. These insights, organised according to the global challenges addressed in this volume, are summarised in Table 25.1.

It is a key proposition of this book that our understanding of global challenges is transformed when we take senses of place into account. This transformation is based on the fundamental premise that we are all *emplaced*, and that the challenges we are facing necessarily occur at a particular time and place. These locations are not mere backdrops or containers for social processes and interactions; they are constitutive elements of what passes for reality and they have agency. Given that, any attempt to understand or to intervene across these global challenges will be deficient if senses of

Table 25.1 A summary of how global challenges interconnect with our senses of place

Thematic area	Key findings
Climate change and ecological regime shifts	Changes to physical place alter the emotional and intangible elements of senses of place, challenging dominant views about the singularity of 'sense', and the fixity of place, encouraging an increased awareness of the temporalities and transitory nature of place.
Migration, mobility and belonging	Senses of place surface as a nexus between mobilities and various forms of belonging and nonbelonging that are, in turn, tied to different degrees of privilege and place-based forms of ontological security.
Renewable energy transitions	Senses of place appear as plural, socially constructed and politically contested symbolic resources in conflicting social contexts, framed as the struggle for a place–technology 'fit'.
Nationalism and competing territorial claims	Hegemonic and alternative versions of senses of place reveal historic dynamics of the (re)production of place. Multiscalar connections between senses of place, spatial justice and place-based political resistance show how ambivalent experiences of place may represent either a threat or a resource to empower communities.
Urban change	Urban change processes accelerate coexisting and competing place meanings that are continuously formulated, negotiated and (re)narrated among people – disclosing the multiple layers of place contestations related to cities undergoing transformations, including tensions between commodification, gentrification and marginalisation of space and communities.
Technological and legal transformations	Technological transformations are tangibly seen in our constantly evolving digital devices and tools producing intangible alterations to social relations and the way we are emplaced. Similarly, legal orders and policies are intangible in and of themselves, but they yield tangible results in the framing of allowable and recommended action in any given place.
Design and planning strategies	Multiple senses of place are drawn from intimate relations with local places that can inform more inclusive design and planning processes and outcomes. These senses of place are in constant negotiation with one another, and when considered, can form the foundation of socially and environmentally responsive urban design and planning.

place are ignored. Moreover, a place-based perspective can offer new solutions to the dire global challenges that we face, as they can provide insights regarding adaptive responses to uncertainty and renewal.

In elaborating the ways that senses of place interconnect with global challenges, we have drawn upon metaphors of navigation and orientation. These metaphors serve two purposes. First, they emphasise a fluid and dynamic perspective on senses of place. Second, they employ a familiar set of concepts as a basis for understanding our collective responses to the global challenges. Concepts such as navigation, shoals, drifting, mooring and anchoring hint at the ways we encounter and respond to challenges – sometimes actively and sometimes passively – as well as the considerable precarities and dangers involved. While any set of metaphorical concepts will have limitations, we believe that these metaphors facilitate understanding of the complex interconnections between senses of place and global challenges.

25.1 Global Challenges Threaten Ontological Security (Shoaling)

All of the chapters in this volume collectively teach us that global challenges can disrupt our ontological security. This section unpacks what this means and then outlines a new epistemic attitude to navigate these challenges in a thoughtful and just manner. To begin, *ontological security*, a term coined by Laing (1960), refers to a ‘continuous person’ who enjoys a stable and whole existence (Kirke, 2020). Giddens (1991) expounded on this concept, describing it as a person’s fundamental sense of safety in the world that is necessary to maintain a sense of well-being and lessen existential anxiety. Place scholars have further noted the fundamental role of place in ontological security. For example, Relph (1976) considers place ‘an ontological structure’ that affords people ‘a secure point from which to look out on the world, a firm grasp of one’s own position in the order of things, and a significant spiritual and psychological attachment to somewhere in particular’ (p. 38).

As formative global challenges unfold, one of the key ways that we experience them is through local disruptions to places. We live our lives situated in time and space, so while we can appreciate dilemmas on the global scale and be motivated by them to act, we also directly experience the influences of distant forces on local activities and places. These disruptions remind us of the precariousness of our emplaced existence, that our sense of ontological security cannot be taken for granted, but largely depends on how we navigate plural senses of place at multiple scales (Williams and Van Patten, 2006). While some see modern ruptures to ontological security as an impetus to seek refuge in everyday routines and social practices (Giddens, 1991), others have argued that ontological security has a ‘status-quo bias’ in privileging a fixed, enduring sense of place (Kinnvall and Mitzen, 2020). From our perspective, a critically reflexive approach to ontological security need not perpetuate the existing social order, but offer a way to adapt to place change and seek more transformative and just outcomes in response to those changes, much in the spirit of Solnit’s (2016) spaciousness of uncertainty noted earlier.

This book therefore takes a wide view of the interconnections between global challenges and senses of place at multiple levels. Senses of place remind us that there are ‘anxious tensions between death and survival, belonging and nonbelonging’ (Lau *et al.*, Chapter 8) and that there is a ‘duality of negotiation and anxiety, as well as resilience and vulnerability’ (Bleibleh, Chapter 14). To maintain some security, we navigate between fixed and fluid attachments to place (Di Masso *et al.*, 2019). In other words, we negotiate between senses of place as a fixed foundation of existence and a mobile and multi-centred understanding in which global challenges pervade personal and social aspects of place (Relph, Chapter 19).

25.1.1 Global Challenges Provide an Opportunity to Disrupt a Damaging Normal

The work presented in this volume also calls out the ways in which disruptions to place can serve to interrupt an already socially and environmentally damaging way of living and relating to place. This was previously noted in Durgerian’s (2019) research on post-earthquake recovery in Christchurch, New Zealand. This study revealed how the indigenous Maori participants saw the earthquake as a ‘welcome disruption to a damaging normal’ that up-ended the colonial identity of the city. The earthquake thereby provided an opportunity for city rebuilding efforts to better accommodate indigenous history, identity and presence erased by colonisation. Similarly, the work in this volume demonstrates new possibilities that emerge from disruption. For example, Hertzog (Chapter 7) draws upon the often positive experiences of urban migrants in Western Africa to emphasise the importance of an ‘extroverted sense of place’ that incorporates migrants’ many diverse experiences of place in the global aftermath of colonialism. Her work disrupts ‘colonial’ narratives on sense of place, which normalised sedentary roots, blamed migration to the city for urban poverty and restricted rural–urban migration. By showing how new migrants often prosper more than host populations while maintaining ‘translocal lives’ and multiple ties to place, Hertzog counters the legacy of colonialism that reshaped senses of place.

Other chapters demonstrate the variability and unevenness in people’s responses to place change and shifts in senses of place more broadly. For example, Gurney *et al.* (Chapter 1) demonstrate how some place meanings deepened (pride and biodiversity) as a result of sudden changes to the Great Barrier Reef, while other place meanings lessened (certain lifestyles, aesthetics and scientific value), suggesting that disruption can lead to both positive and negative changes in place meanings. Further, Relph (Chapter 19) suggests that technological innovations are more likely to change the personal, social and public aspects of place, but the neurological and ontological are arguably less affected by electronic media. As urban transformations, spatialised forms of political violence, evolving digital domains and new transnational relations are navigated, place-related adaptive practices and forms of resistance may emerge and crystallise as positive forms of social change. However, the contrary may occur if, for instance, people are not free to move or remain, they are unable to participate in the digital arena, or they are structurally dis-empowered to assert their rights to place. Thus, although navigation might be interrupted by the structural conditions that frame

human experience, global challenges present opportunities to redirect our efforts towards a more inclusive future driven by provisional, adaptive approaches from the ground up.

The global challenges considered in this volume are like shoals in the sea, causing us to pause, reconsider our current situation and deliberate on where we want to go. Much like rock outcroppings, coral beds and sandbars cause ships to reassess their route (King, 2019), the global challenges before us require thoughtful navigation and readjustment both in terms of decisions we make in our daily lives and decisions made in policy and planning arenas. As King (2019) notes, shoals are ‘metaphors for contact and encounter, as well as emergent formations’ (p. 3). While King applies the shoals analogy to the role of Black and Indigenous epistemologies and decolonial politics, the metaphor applies to the disruptions posed by the global challenges addressed in this book as they are largely catalysed by an industrial, neoliberal, capitalist mode of living and the resulting environmental harms are distributed unevenly. Notably, shoals represent a dynamic set of processes that are always in a state of flux (King, 2019). As such, they present us with opportunities to identify new pathways, collaborations and possibilities towards a proactive disruption of the momentum of long-standing and contemporary modes of thinking and living on the land. Nonetheless, the ontological plurality of senses of place can also serve as shoals – for example, having to navigate multiple alternative routes with multiple endpoints could lead to a less purposeful ‘drifting’ as we endeavour to articulate and negotiate new policies, coalitions and strategies. Moreover, this drifting may not always be conscious. Lau *et al.* (Chapter 8) point out that we also perform belonging in an unconscious sense via an ‘unspoken social contract’ with the other who provides navigational cues that can inform *where we are* (place) and define *who we are* (identity).

25.1.2 Navigating Global Challenges Effectively Requires a New Epistemic Attitude

We face the global challenges before us with a legacy of an approach to knowledge and inquiry (epistemology) that was advanced in the era of the Enlightenment in which science offered unique access to a singular, external Truth and therefore provided a sense of certitude over arbitrary habit, custom and tradition (Giddens, 1991). Since then, most science and policy has assigned greater weight to abstract, universal views from nowhere aimed at transcending place, whereas most practical action is necessarily context-dependent (Williams, 2013; Nagel, 1986). As various social critics of modernity (Bauman, 2013; Giddens, 1991) have argued, science attained increasing cultural and institutional hegemony over the production of knowledge, rendering the scientific enterprise and fact-finding deliberations of policymakers ‘largely undemocratic and disconnected from people’s lived experiences’ (Gauchat, 2011, p. 755). That *epistemic attitude* – or approach to knowledge – is rooted in white, Western and settler-colonial biases that eschew local, indigenous and other forms of knowing. The problems that such an attitude has wrought now demand a new epistemic attitude. We must reconsider what we know on a fundamental level, questioning not only our current ways of being in the world (ontology), but also the forms and ways in which we

build knowledge (epistemology) and the normative-political considerations we make in applying such knowledge (axiology) towards shaping more sustainable and just places in the face of chronic uncertainty (Williams, 2018).

Currently, the declining public legitimacy and increasing politicisation of scientific institutions and practices (Gauchat, 2011) – and a more general loss of epistemological bearings in the era of ‘post-truth’ (Kelkar, 2019) – intensify the sense of flux and fragility of life in the face of constant change (Bauman, 2013). Navigating global challenges in this context requires an epistemic attitude that pluralises and problematises how we understand and act in an increasingly complex and uncertain world (Mitchell, 2009). Such a position challenges the epistemic supremacy long afforded to science and technical expertise over the knowledge of locally emplaced actors (Castro, Chapter 20; Bartel, 2014) and points towards democratised, inclusive and place-based approaches for the production and application of knowledge (Carrozza, 2015). That positioning encourages us to drop anchors in certain disciplinary fields and concepts, and comfortably drift into other knowledge domains to enrich existing understandings and welcome new ones, thus enabling novel streams of inquiry. Such drifting also means being able to translate, negotiate and synthesise multiple forms of knowledge across diverse institutions, actors and processes (Tengö *et al.*, 2017). This epistemic attitude produces knowledge in the unsettled grounds of unquiet and unfixed senses of place.

In the Introduction, we proposed that a ‘complex, dynamic constellation of materiality, representations and performative practices’ are central to a new epistemic attitude for navigating multiple global challenges. This more relational understanding of place involves recognising the multi-centred nature of place; for example, consideration of different time–space dynamics (Murphy and Williams, Chapter 2), different scales of people–place relations (Devine-Wright and Wiersma, Chapter 11) and the inevitably plural, incomplete and dynamic character of all knowledge (Castro, Chapter 20). Adopting an epistemic attitude that pays greater attention to place leads to methods of knowledge creation and integration that emphasise collaborative forms of learning among scientists, policymakers and local actors (Williams, 2018) and advances the sense of procedural justice that comes from both hearing and being heard (Hill *et al.*, 2019). It promotes forms of inquiry built on civically engaged, collaboratively co-produced post-normally guided science (Funtowicz and Ravetz, 1993) as a way forward in turbulent times.

25.2 Elevating Senses of Place in Navigating Global Challenges

As place change invites us to reconsider our emplaced existence, we find ourselves experiencing new, more nuanced forms of sensing place, as well as renewed and emerging modes of human ‘locatedness’. In this book, we call for a renewed focus on senses of place to move us forward in conducting research and developing policies in an environmentally and socially responsible way. We propose that a pluralisation of ‘sense’ is foundational to a more inclusive epistemic attitude that foregrounds situated

knowledge, the lived experience of place and the interpretation and meaning-making around place and place change. When reflecting on the pluralised and dynamic nature of senses of place presented across the book chapters, three key aspects of senses of place emerge – the temporal, spatial and normative.

25.2.1 Temporal Aspects of Senses of Place: Navigating between Stability and Change

Senses of place necessarily entail the temporal. The past shapes today's senses of place while present times shape new senses of place. A temporal understanding of senses of place would consider life cycles, genealogic explanations and longitudinal logics such as systemic shifts over time (Pinheiro, 2013; Werner *et al.*, 1988). Yet, it can also include more nuanced aspects of time; for example, the extent to which senses of place have the capacity to condense and echo the historical *zeitgeist* or 'spirit of the times'. This may include the virtualisation of social relations, the territorial reorganisation of nations or the acceleration of migration and mobility trends. Senses of place can also help call out the historical legacies that can lay the foundation for renewed senses of place, particularly when they include marginalised voices and histories. In this respect, historically sedimented forms of making sense of place may be drawn into emerging forms of representing places and people-place relations, as cultural antecedents shape the environmental present in connection with the environmental past (e.g. the politics of place following postcolonial logics of territorial authority and privilege; or essentialised views of a place in the past shaping 'new' senses of place in the present).

These temporal dynamics are illustrated in many chapters of this volume. For example, regional senses of place are expressed in narratives of both stability and change (Stewart and Evans, Chapter 5). Changes can be both descriptive, referring to how the place has changed, or evaluative, referring to whether the changes shaping senses of place were regarded as positive or negative (Stedman and Nilson, Chapter 10). Regarding the former, depending on context, navigation between stability and change can strengthen one's senses of place (Bleibleh, Chapter 14), or it can change the types and intensities of place meanings (Gurney *et al.*, Chapter 1) or lead to dynamic and unfolding relationships between people and places. In regards to the latter – that is, how changes to place influence senses of place – this is evident in environmental management efforts, which can further change the character of a place (Murphy *et al.*, Chapter 4), or in catalysing an interweaving of affective, discursive, material, embodied and institutional practices (Berroeta *et al.*, Chapter 3). Global challenges like climate change also call into question the very notion of change itself. Murphy and Williams (Chapter 2) raise such questions and assert that there can be plural senses of future places, each informing views on climate change adaptation. In summary, the dialectic between temporal stability and change surfaces as a co-constitutive tension lying at the core of emerging senses of place that arise in the face of global challenges. In considering these tensions, we need to pay attention to both conservative and progressive

meanings of place, recognising that together they provide a full arc of understandings and approaches to navigating between stability and change, and necessitate navigation on their own.

25.2.2 Spatial Aspects of Senses of Place: Navigating between Liquid Places and Solid Grounds

The dynamic interplay between changing senses and changing places occurs at different spatial scales from the intimate to the global. Senses of place can also coexist in polycentric ways with multiple simultaneous connections to different places at different geographic scales. Moreover, place changes at these different spatial scales suggest a tension between stability and change, between liquid places and solid ground. That is, the places we once knew or relied on to build a coherent narrative of self and world may become unrecognisable, revalued or left behind in a context of change, thereby unsettling a 'stable' sense of place grounded in a modern ideology of rootedness, spatial fixity and temporal stability. However, new territorial anchorages may emerge that tie ourselves to place in novel ways, relocating senses of place in 'liquid' times. These more liquid forms of connection to place are characterised by provisionality, constant change, uncertainty and a lack of permanent 'moorings' (Bauman, 2013). In this context, we argue that senses of place tend to be less 'solid', stable, fixed and centred than previously assumed, and more 'liquid', unstable, mobile and de/multi-centred across spatial nodes in an interdependent and contingent web of volatile place-making processes.

Several chapters in this volume illustrate how territorial reorganisations of nations, deterritorialisation of social relations, multi-localisations in transnational migration or multiscalar place-making seem to emphasise a dialectic between the liquid and the solid grounds of our emplaced experience. For migrant households, for example, home is not necessarily in town or in the current place of residence, but in the place of origin, or another, third place (Hertzog, Chapter 7; Huang, Chapter 9). For longer-term residents in Barcelona, gentrification processes, including the aestheticisation of spaces and retail spaces and rebranding of the 'new' into the 'old', can challenge their subjective relationships with places (Di Masso *et al.*, Chapter 17). From a landscape planning perspective, Puren and Drewes (Chapter 22) indicate that, despite many residents holding fluid and relational place meanings, the substantive planning paradigm privileged habitual and fixed understandings of sense of place.

25.2.3 Normative Aspects of Senses of Place: Navigating Power Relations

Navigating changing senses of place also means navigating power relations and challenging the normative order of things. Notions of good or bad, appropriate and inappropriate, just and unjust, belonging and exclusion, are also defined, expressed, organised and enforced in spatial ways (Sibley, 1995; Cresswell, 1996). Accordingly, it is expected that processes changing senses of place amplify the moral, political and ideological role played by place relations in our lives. In this respect, the global

challenges considered in this volume reveal how the normative aspects of senses of place become (re)defined, negotiated and disputed in all manner of ways. These include place-oriented policy implementation, political resistance to dominant senses of place, tensions between top-down or bottom-up decision-making and conflicting strategies of territorial control and completion for a right to place in a changing world.

Many of the chapters in this volume provide examples of how power relations and social values catalyse contested and conflicting place interpretations and related territorial practices, evidencing the centrality of the normative aspects of senses of place, and their inherent disputes, in navigating global challenges. This emerges in analyses of competing senses of place and claims of spatial legitimacy between elites and the marginalised as reflected in different discourses around the future of a rapidly growing city (Manzo and Desanto, Chapter 16), as well as the contested place meanings of residents and tourism agencies with respect to place change and visitor management (Raymond *et al.*, Chapter 6). In contexts of violence and conflict, political aspects of place and power relations can both violate and reinforce one's sense of place (Bleibleh, Chapter 14). Explorations that consider the political economy of space note that capitalist modes of production can lead to both the humanisation and dehumanisation of marginalised people, leading to contradictory expressions of place meanings (Farias and Diniz, Chapter 18). The power of the political economy and globalisation is also at play in an analysis of how multinational businesses can wilfully alter senses of place through branding strategies that uphold an ideal home that de-places traditional, culturally based interpretations and expressions of home in favour of more generic ones that convey a cultural 'odourlessness' (Chong and Chow, Chapter 24).

25.3 Future Navigation of Global Challenges through Senses of Place

In the remainder of this chapter, we highlight some emerging future directions for research to understand changing senses of place in the context of significant global challenges. We make the case that research, practice and policy would benefit from: (1) adopting more provisional approaches to how we create knowledge and apply it to action; (2) rethinking a relational ontology of senses of place; and (3) developing reflexive, anticipatory and agentic capacities to respond to the 'shoals' created by global challenges. Each of these areas for future exploration are described below.

25.3.1 Adopting Provisional Approaches to How We Apply Knowledge to Action

The contributions in this volume make clear that we need a more provisional approach to how we generate (scientific) knowledge and apply it to place-configuring action. By emphasising plurality, diverse positionality, more inclusive engagement and adaptive forms of knowledge creation and governance, we can shift from expert-driven decision-making structures to multi-level and polycentric approaches that emphasise inclusiveness, collaboration, local knowledge and identities (Koontz *et al.*, 2015; Wyborn, 2015; Armitage *et al.*, 2011). This, in turn, facilitates an enlarged social

capacity and flexibility to put responses to global challenges ‘into place’. Such an approach has recently been framed as ‘action-oriented knowledge for sustainability’ (Caniglia *et al.*, 2020; Fazey *et al.*, 2020). It foregrounds the need to integrate the many kinds of knowledge involved in the shared design, enactment and realisation of change and embraces situated knowledge tailored to specific contexts (e.g. local place-based knowledge or indigenous knowledge) as ‘essential for taking action adaptively in response to changing circumstances’ (Caniglia *et al.*, 2020, p. 4). We see similar discussions in the values of nature literature where senses of place have been incorporated into a wider concept of ‘relational values’ and where the relevancy of the ‘relational turn’ in the social sciences is considered for sustainability science (West *et al.*, 2020). For example, West and colleagues outline the characteristics of relational thinking as an awareness of continually unfolding processes, embodied experience, reconstructing language and concepts, and ethics and practices of care. These characteristics reflect the collective message and interpretation of senses of place articulated in this volume.

As uncertainty looms over our futures, navigating our way forward must be much more provisional and in constant dialogue and negotiation. This means we need to weave, within and across different senses of place, a consideration of multiple local-to-global dynamics of change as well as diverse spatial identities. This type of navigation calls for governance and institutional practices that can adopt a nimble and adaptive response to spatial unfolding at multiple scales. New ways of configuring places are needed that rely less on extrapolation, projection of trends and navigation as precise steering. Instead, it is useful to conceptualise navigation as an iterative and reflexive process of repositioning and adjusting, sometimes mooring in one place (spatially, epistemologically) and sometimes intentionally reorienting in a new direction, guided by principles of adaptability and flexibility.

These principles are reflected in the turn towards ‘place-based governance’ in the sustainability sciences (Buijs *et al.*, 2019; Gulsrud *et al.*, 2018; George and Reed, 2017), which responds to dynamic global-scale problems by prioritising institutional diversity and emergent, self-organising learning networks and partnerships among different stakeholders. We also see promise in transformative innovations research where socio-material, emergent, multi-actor initiatives are co-created across different contexts to promote sustainability transitions (Loorbach *et al.*, 2020). This approach emerges in this volume in explorations of place as a milieu for active urban experimentation where new place-related narratives of change, novel practices and collaboration emerge to achieve a more sustainable city (von Wirth and Frantzeskaki, Chapter 23).

Navigating global challenges could build on the idea of evolving discursive spaces in which co-production between science and governance can expand, contract or change direction over time in response to both local and extra-local forces and actors (Wyborn *et al.*, 2015). Adaptive capacity is the ability to navigate new and emerging pathways and to enlarge the future adaptive space. Rather than trying to tame or ignore uncertainty, an adaptive approach accepts change and develops resilience in its responses to it. It involves nimble thinking that recognises existing injustice and

power differentials and commits to empowering more diverse voices to participate in navigating the flux and uncertainties of global challenges. Including situated knowledge and the lived experiences of place in response to place change are thus critical steps towards democratising knowledge creation and adjusting actions for configuring places.

25.3.2 Rethinking Relational Ontology through Senses of Place

Navigating changing senses of place in the context of global challenges calls us to rethink our interconnectedness to each other, to other species and to the planet as a whole. Such a relational ontology posits that ‘what distinguishes a subject from a subject, a subject from an object, or an object from an object is their mutual relation rather than their substance’ (Schaab, 2013). While this is the basis for indigenous approaches to place, knowledge and being, it has been more recently expressed in two distinct theories and bodies of literature that emphasise relationality: systems theory in ecology and earth sciences (e.g. Berkes *et al.*, 2003) and assemblage theory as developed to analyse social complexity, with an emphasis on exchangeability and multiple functioning (Deleuze and Guattari, 1980). Because of their diverse epistemological and disciplinary roots, these approaches are not typically seen as commensurate (the former stemmed from a positivistic tradition and the latter from a more constructionist one), yet we find potential in both of these to help us understand senses of place and move us towards solutions that are socially and environmentally responsive and responsible. Both theories can provide conceptual tools to understand how senses of place are generated within complex and dynamic networks.

We find particular potential in assemblage theory as a ‘stream of relational thinking that opposes taxonomic essentialism, rejects binaries, stresses the material aspects of phenomena, and supports a conception of a mind-independent reality’ (Briassoulis, 2017, p. 169). Assemblages emphasise relationships between history and potential, between the actual and the possible (Langhoerst, 2018). They do not rely on resolving difference but working with a range of actors, networks, spatialities and values, thus offering an enabling process model (Langhoerst, 2018) to reconceptualising senses of place. Several authors in this volume draw on assemblage theory; for example, Berroeta *et al.* (Chapter 3), who describe ‘assemblage as of influences and reciprocal variations between subjective, social and spatial aspects, articulating at the same time the relationship between individual experiences of place and social and institutional processes’.

While both relational theories can be useful to future research on place, considerable conceptual and methodological developments are still required. For example, in systems theory, human and natural systems are recognised as connected, but experience is often reduced to an individual, subjective, cognitive (i.e. human) phenomenon (West *et al.*, 2020). There are also methodological challenges associated with integrating relational thinking into natural resource management (Raymond *et al.* 2021 responding to West *et al.*, 2020), including how to operationalise aspects of relationality if objects and

subjects are dynamically co-constituted and how to ‘lever’ transformations towards sustainability if people–place relations are continuously unfolding.

Still, we maintain that a relational ontology has important potential to address questions of how to adapt and transform in the face of complex global challenges, multiple uncertainties, cross-scale interactions and the divergent values and needs of places, cultures and communities. Explorations of senses of place from a relational perspective can help us develop a post-normal science agenda that recognises the value of different starting points to address the global challenges presented in this book. It is in embracing this relationality that we develop the nimble, provisional and adaptive response we emphasise here.

25.3.3 Develop Reflexive, Anticipatory and Agentic Capacities to Navigate Ruptures and New Beginnings

The global challenges before us demand reflexivity – a thoughtful awareness of our current situatedness to help us find a path into uncertain futures. We draw on Ryan and Walsh’s (2018) notion of reflexivity as ‘a critical assessment of the significance of environment, power and context as well as subjectivity in the delineation and construction of knowledge’ (p. 1), and we would add the (re)construction of place. The uncertainty we face can only be tackled by placing values, normative commitments and experiential and plural ways of knowing at the fore (Nightingale *et al.*, 2020; Tengö *et al.*, 2017). Transformations towards more regenerative and equitable futures call for a commitment to polycentric and contextualised learning systems that take account of the highly interconnected nature of social and environmental issues (Fazey *et al.*, 2020). This is a critical part of navigation – we are driven by the lure of finding new configurations of human ‘locatedness’ in a changing world. Yet we must remain cognisant of the benefits of anchoring along with the risks, when the value or necessity of moving leads to renewed considerations of experiences of waiting, being still, and being stuck in one place (Cresswell, 2012). *Reflexive capacities* are critical to transformational learning (Borie *et al.*, 2020; Moore *et al.*, 2018) and therefore becoming unstuck – that is, processes that enable individuals and groups to surface the constraints and opportunities created by the norms, values, beliefs and expectations of society (Moore *et al.*, 2018), and which shape or reinforce one’s senses of place.

Navigating global challenges with a renewed commitment to senses of place also suggests new *capabilities to anticipate and govern* ruptures and steer new beginnings, much like the agentic approach to assemblages described earlier. In times of amplifying global challenges and their potential for disruptive societal consequences, anticipatory governance can offer a flexible ‘decision framework that uses a wide range of possible futures to prepare for change and to guide current decisions toward maximizing future alternatives or minimizing future threats’ (Quay, 2010, p. 496). Such anticipatory processes seek to extend the boundaries of imagination, to explore future directions under multiple drivers of change and to guide decisions and policy formation under conditions of complexity and uncertainty (Muiderman *et al.*, 2020). Unlike adaptation, anticipation involves intentionality, action, agency, imagination,

possibility and choice, while at the same time acknowledging fear, uncertainty and apprehension (Nuttall, 2010). Making sense of how anticipatory and transformative capabilities of different actors (e.g. Hölscher *et al.*, 2019) can include the plurality of lived place experiences and local knowledge is a relevant avenue for further exploration.

Finally, navigating through global challenges also involves imagining and practising new forms and strategies of social resistance and political transformation that build on *citizens' agentic capacities* to initiate local change to global problems, and not just to adapt to them. These capacities require citizens to acknowledge and embrace contestation, plurality and inherent uncertainties by identifying stability in dynamically evolving local contexts. These agentic abilities could also entail stewardship capacities (Hölscher *et al.*, 2019), meaning the resources and skills to anticipate and respond to (global) long-term change, while connecting these anticipations to short-term local action. This may involve capacities to actively challenge and instigate disruption to a damaging status quo – that is, the abilities to recognise and dismantle place injustices, continuous (dis)empowerment, (un)sustainabilities and local (mal) adaptations.

By promoting and strengthening place-related agentic capacities, we specifically advocate channelling these towards progressive dynamics of spatial justice (Soja, 2010). Assuming that social inequalities and structural oppression are mapped onto the micro-geographies of everyday life (Cresswell, 2011), citizens' active engagement in changing senses of place emerges as an opportunity to unsettle the spatial grounds of political injustice and reinforce citizenship's spatial entitlements (Di Masso, 2015). Collective resistance and citizens' active commitment to positive place change against exclusionary forms of urban transformation, for instance, have proved a politically effective way of remaking cooperative models of urban governance, reinvigorating the right to the city by knitting public alliances through the empowering capacities of a community's place transformations (Marulanda and Martí, 2019; Goetz *et al.*, 2019).

25.4 Summary

As we continue our attempts to navigate the global challenges before us and reflect on how to go thoughtfully, justly and sustainably into an increasingly unpredictable future, the importance of place and the dynamic ways that our senses of places respond to and evolve with our changing circumstances become more evident. The body of work in this volume suggests that senses of place can offer a broader, more inclusive epistemic attitude that is based upon a plural and provisional approach to knowledge and action. In turn, this enables a systems understanding of complexity in both place experience and place research, and can develop citizens' capacities to navigate ruptures and forge new pathways forward through a critically reflexive approach to people–place relations.

As Tsing (2015) notes, 'precarity once seemed the fate of the less fortunate. Now it seems that all our lives are precarious' (p. 2). Thus, it is together that we must orient

ourselves to this common life of no guarantees. We collectively face the imaginative challenge of navigating a journey without a detailed map of where we wish to travel. Collaboratively surviving in precarious times, and we would add thriving for all species, requires curiosity (Tsing 2015) and a provisional, reflexive and anticipatory approach to place change. This requires a deepening awareness of and commitment not only to place, but also to hope. Like Solnit (2016), our view of hope is not a belief that everything will be fine; it is about developing broad perspectives with specific possibilities: 'hope locates itself in the premises that we don't know what will happen and that in the spaciousness of uncertainty is room to act' (p. xiv). In this book, we have explored the spaciousness of the uncertainty created by global challenges, and in that spaciousness we can (re)discover new possibilities and emergent senses of place that work together to provide a hopeful path forward.

References

- Armitage, D., Berkes, F., Dale, A., Kocho-Schellenberg, E. and Patton, E. (2011) 'Co-management and the co-production of knowledge: learning to adapt in Canada's Arctic', *Global Environmental Change*, vol. 21, no. 3, pp. 995–1004. <https://doi.org/10.1016/j.gloenvcha.2011.04.006>
- Bartel, R. (2014) 'Vernacular knowledge and environmental law: cause and cure for regulatory failure', *Local Environment*, vol. 19, no. 8, pp. 891–914. <https://doi.org/10.1080/13549839.2013.798636>
- Bauman, Z. (2013) *Liquid Modernity*, Chichester, Wiley.
- Berkes, F., Colding, J., and Folke, C. (eds) (2008) *Navigating Social-Ecological Systems: Building Resilience for Complexity and Change*. Cambridge, Cambridge University Press.
- Borie, M., Gustafsson, K. M., Obermeister, N., Turnhout, E. and Bridgewater, P. (2020) 'Institutionalising reflexivity? Transformative learning and the intergovernmental science-policy: Platform on Biodiversity and Ecosystem Services (IPBES)', *Environmental Science and Policy*, vol. 110, pp. 71–76. <https://doi.org/10.1016/j.envsci.2020.05.005>
- Briassoulis, H. (2017) 'Response assemblages and their socioecological fit: conceptualizing human responses to environmental degradation', *Dialogues in Human Geography*, vol. 7, pp. 166–185. <https://doi.org/10.1177/2043820617720079>
- Buijs, A., Hansen, R., Van der Jagt, S., et al. (2019) 'Mosaic governance for urban green infrastructure: upscaling active citizenship from a local government perspective', *Urban Forestry & Urban Greening*, vol. 40, pp. 53–62. <https://doi.org/10.1016/j.ufug.2018.06.011>
- Caniglia, G., Luederitz, C., von Wirth, T., et al. (2020) 'A pluralistic and integrated approach to action-oriented knowledge for sustainability', *Nature Sustainability*. <https://doi.org/10.1038/s41893-020-00616-z>
- Carozza, C. (2015) 'Democratizing expertise and environmental governance: different approaches to the politics of science and their relevance for policy analysis', *Journal of Environmental Policy & Planning*, vol. 17, no. 1, pp. 108–126. <https://doi.org/10.1080/1523908X.2014.914894>
- Cresswell, T. (1996) *In Place/Out of Place: Geography, Ideology and Transgression*, Minneapolis, University of Minnesota Press.
- Cresswell, T. (2011) Mobilities I: catching up. *Progress in Human Geography*, vol. 35, no. 4, pp. 550–558. <https://doi.org/10.1177/0309132510383348>

- Cresswell, T. (2012) 'Mobilities II: still', *Progress in Human Geography*, vol. 36, no. 5, pp. 645–653. <https://doi.org/10.1177/0309132511423349>
- Deleuze, G. and Guattari, F. (1980) *Capitalisme et schizophrénie*. Paris, Les.
- Di Masso, A. (2015) 'Micropolitics of public space: on the contested limits of citizenship as a locational practice', *Journal of Social & Political Psychology*, vol. 3, no. 2, pp. 63–83. <https://doi.org/10.5964/jspp.v3i2.322>
- Di Masso, A., Williams, D. R., Raymond, C. M., et al. (2019) 'Between fixities and flows: navigating place attachments in an increasingly mobile world', *Journal of Environmental Psychology*, vol. 61, pp. 125–133. <https://doi.org/10.1016/j.jenvp.2019.01.006>
- Fazey, I., Schöpke, N., Caniglia, G., et al. (2020) 'Transforming knowledge systems for life on earth: visions of future systems and how to get there', *Energy Research and Social Science*, vol. 70, article 101724. <https://doi.org/10.1016/j.erss.2020.101724>
- Funtowicz, S. O. and Ravetz, J. R. (1993) 'Science for the post-normal age', *Futures*, vol. 25, no. 7, pp. 739–755. [https://doi.org/10.1016/0016-3287\(93\)90022-L](https://doi.org/10.1016/0016-3287(93)90022-L)
- Gauchat, G. (2011) 'The cultural authority of science: public trust and acceptance of organized science', *Public Understanding of Science*, vol. 20, pp. 751–770. <https://doi.org/10.1177/0963662510365246>
- George, C. and Reed, M. G. (2017) 'Operationalising just sustainability: towards a model for place-based governance', *Local Environment*, vol. 22, pp. 1105–1123. <https://doi.org/10.1080/13549839.2015.1101059>
- Giddens, A. (1991) *Modernity and Self-Identity: Self and Society in the Late Modern Age*, Stanford, Stanford University Press.
- Goetz, E., Lewis, B., Damiano, A. and Calhoun, M. (2019) 'The diversity of gentrification. Multiple forms of gentrification in Minneapolis and St. Paul. Center for Urban and Regional Affairs (CURA)', University of Minnesota. Available at: <http://gentrification.umn.edu/sites/gentrification.dl.umn.edu/files/media/diversity-of-gentrification-012519.pdf> (accessed 12 April 2020).
- Gulrud, N. M., Hertzog, K. and Shears, I. (2018) 'Innovative urban forestry governance in Melbourne? Investigating "green placemaking" as a nature-based solution', *Environmental Research*, vol. 161, pp. 158–167. <https://doi.org/10.1016/j.envres.2017.11.005>
- Hill, G., Kolmes, S., Humphreys, M., McLain, R., and Jones, E. T. (2019) 'Using decision support tools in multistakeholder environmental planning: restorative justice and subbasin planning in the Columbia River Basin', *Journal of Environmental Studies and Sciences*, vol. 9, pp. 170–186. <https://doi.org/10.1007/s13412-019-00548-x>
- Hölscher, K., Frantzeskaki, N., McPhearson, T. and Loorbach, D. (2019) 'Capacities for urban transformations governance and the case of New York City', *Cities*, vol. 94, pp. 186–199. <https://doi.org/10.1016/j.cities.2019.05.037>
- Kelkar, S. (2019) 'Post-truth and the search for objectivity: political polarization and the remaking of knowledge production', *Engaging Science, Technology, and Society*, vol. 5, pp. 86–106. <https://doi.org/10.17351/ests2019.268>
- King, T. L. (2019) *The Black shoals: Offshore formations of Black and Native studies*, Durham, NC, Duke University Press. <https://doi.org/10.1215/9781478005681>
- Kinnvall, C. and Mitzen, J. (2020) 'Anxiety, fear, and ontological security in world politics: thinking with and beyond Giddens', *International Theory*, vol. 12, no. 2, pp. 240–256. <https://doi.org/10.1017/S175297192000010X>
- Kirke, X. (2020) 'Anxiety and COVID-19: the role of ontological security and myth', *E-International Relations* [Online]. Available at: www.e-ir.info/2020/05/29/anxiety-and-covid-19-the-role-of-ontological-security-and-myth (accessed 8 December 2020).

- Koontz, T. M., Gupta, D., Mudliar, P. and Ranjan, P. (2015) 'Adaptive institutions in social-ecological systems governance: a synthesis framework', *Environmental Science & Policy*, vol. 53, no. B, pp. 139–51. <https://doi.org/10.1016/j.envsci.2015.01.003>
- Laing, R. D. (1960) *The Divided Self: An Existential Study in Sanity and Madness*, London, Penguin Books.
- Langhoerst, J. (2018) 'Enacting landscape democracy: assembling public open space and asserting the right to the city', in Egoz, S., Jorgenson, K., and Ruggeri, D. (eds), *Defining Landscape Democracy: A Path to Spatial Justice*. Aldershot, Edward Elgar, pp. 106–118.
- Loorbach, D., Wittmayer, J., Avelino, F., von Wirth, T. and Frantzeskaki, N. (2020) 'Transformative innovation and translocal diffusion', *Environmental Innovation and Societal Transitions*, vol. 35, pp. 251–260. <https://doi.org/10.1016/j.eist.2020.01.009>
- Marulanda, A. and Marti, M. (2019) 'Desafiando la gentrificación. Resistencias a los desplazamientos en los centros históricos de Quito y Cuenca'. *Scripta Nova*, vol. 13, no. 607, pp. 1–27.
- Moore, M.-L., Olsson, P., Nilsson, W., Rose, L. and Westley, F. R. (2018) 'Navigating emergence and system reflexivity as key transformative capacities: experiences from a Global Fellowship program', *Ecology and Society*, vol. 23, no. 2, p. 38. <https://doi.org/10.5751/ES-10166-230238>
- Mitchell, S. (2009) *Unsimple Truths: Science, Complexity and Policy*, Chicago, University of Chicago Press.
- Muiderman, K., Gupta, A., Vervoort, J. and Biermann, F. (2020) 'Four approaches to anticipatory climate governance: different conceptions of the future and implications for the present', *Wiley Interdisciplinary Reviews: Climate Change*, vol. 11, no. 6, pp. e673. <https://doi.org/10.1002/wcc.673>
- Nagel, T. (1986) *The View from Nowhere*, New York, Oxford University Press.
- Nightingale, A. J., Eriksen, S., Taylor, M., et al. (2020) 'Beyond technical fixes: climate solutions and the great derangement', *Climate and Development*, vol. 12, no. 4 <https://doi.org/10.1080/17565529.2019.1624495>
- Nuttall, M. (2010) 'Anticipation, climate change, and movement in Greenland', *Les Inuit et le changement climatique/The Inuit and Climate Change*, vol. 34, pp. 21–37.
- Pinheiro, J. (2013) 'Time, a slippery challenge'. *Bulletin of People–Environment Studies*, vol. 39, pp. 8–13.
- Quay, M. (2010) 'Anticipatory governance: a tool for climate change adaptation', *Journal of the American Planning Association*, vol. 76, no. 4, pp. 496–511. <https://doi.org/10.1080/01944363.2010.508428>
- Raymond, C. M., Kaaronen, R., Giusti, M., Linder, N. and Barthel, S. (2021) 'Engaging with the pragmatics of relational thinking, leverage points and transformations: a reply to West et al. 2020. Ecosystems and People, vol. 17, no. 1, pp. 1–5. <https://doi.org/10.1080/26395916.2020.1867645>
- Relph, T. (1976) *Place and Placelessness*, London, Pion Limited.
- Ryan, A. and Walsh, T. (2018) 'Reflexivity and critical pedagogy', in Ryan, A. and Walsh, T. (eds), *Reflexivity and Critical Pedagogy*, Leiden, Brill Sense, pp. 1–14. <https://doi.org/10.1163/9789004384507>
- Schaab, G. L. (2013) 'Relational ontology', in Runehov, A. L. C., and Oviedo, L. (eds), *Encyclopedia of Sciences and Religions*, Dordrecht, Springer. https://doi.org/10.1007/978-1-4020-8265-8_847
- Sibley, D. (1995) *Geographies of Exclusion: Society and Difference in the West*, East Sussex, Psychology Press. <https://doi.org/10.4324/9780203430545>
- Soja, E. (2010) *Seeking Spatial Justice*, Minnesota, University of Minnesota Press.

- Solnit, R. (2016) *Hope in the Dark: Untold Histories, Wild Possibilities*, Chicago, Haymarket Press.
- Tengö, M., Hill, R., Malmer, P., et al. (2017) 'Weaving knowledge systems in IPBES, CBD and beyond: lessons learned for sustainability', *Current Opinion in Environmental Sustainability* vols 26–27, pp. 17–25. <https://doi.org/10.1016/j.cosust.2016.12.005>
- Tsing, A. L. (2015) *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*, Princeton, Princeton University Press. <https://doi.org/10.2307/j.ctvc77bcc>
- Werner, E. E. (1988). 'Size, scaling, and the evolution of complex life cycles'. In *Size-Structured Populations*. Berlin: Springer, pp. 60–81.
- West, S., Jamila Haider, L., Stålhammar, S. and Woroniecki, S. (2020) 'A relational turn for sustainability science? Relational thinking, leverage points and transformations', *Ecosystems and People*, vol. 16, no. 1, pp. 304–325. <https://doi.org/10.1080/26395916.2020.1814417>
- Williams, D. R. (2013) 'Science, practice, and place', in Stewart, W. P., Williams, D. R. and Kruger, L. E. (eds), *Place-Based Conservation: Perspectives from the Social Sciences*, Dordrecht, Springer, pp. 21–34. <https://doi.org/10.1007/978-94-007-5802-5>
- Williams, D. R. (2018) 'Spacing conservation practice: place-making, social learning, and adaptive governance in natural resource management', in Marsden, T. (ed.), *The SAGE Handbook of Nature*, vol. 1, London, SAGE Publications, pp. 285–303.
- Williams, D. R. and Van Patten, S. R. (2006) 'Home and away? Creating identities and sustaining places in a multicentered world', in McIntyre, N., Williams, D. R. and McHugh, K. E. (eds), *Multiple Dwelling and Tourism: Negotiating Place, Home, and Identity*, Cambridge, CABI Publishing, pp. 32–50.
- Wyborn, C. (2015) 'Co-productive governance: a relational framework for adaptive governance', *Global Environmental Change*, vol. 30, pp. 56–67. <https://doi.org/10.1016/j.gloenvcha.2014.10.009>
- Wyborn, C., Yung, L., Murphy, D. and Williams, D. R. (2015) 'Situating adaptation: how governance challenges and perceptions of uncertainty influence adaptation in the Rocky Mountains', *Regional Environmental Change*, vol. 15, pp. 669–682. <https://doi.org/10.1007/s10113-014-0663-3>