

#### CHAPTER 11

# Towards a Political Ecology of EU Energy Policy

# Gavin Bridge, Stefania Barca, Begüm Özkaynak, Ethemcan Turhan, and Ryan Wyeth

**Abstract** At the root of energy policy are fundamental questions about the sort of social and environmental futures in which people want to live and how decisions over different energy pathways and energy futures are made. The interdisciplinary field of political ecology has the capacity to address such questions, while also challenging how energy

G. Bridge (⋈) • R. Wyeth

Department of Geography, Durham University, Durham, UK e-mail: g.j.bridge@durham.ac.uk; ryan.d.wyeth@durham.ac.uk

S. Barca

Center for Social Studies, University of Coimbra, Coimbra, Portugal e-mail: sbarca@ces.uc.pt

B. Özkavnak

Department of Economics, Boğaziçi University, Istanbul, Turkey e-mail: begum.ozkaynak@boun.edu.tr

E. Turhan

Environmental Humanities Lab, Division of History of Science, Technology and Environment, KTH Royal Institute of Technology, Stockholm, Sweden e-mail: ethemcan@kth.se

policy conventionally gets done. We outline a political ecology perspective on EU energy policy that illuminates how the distribution of social power affects access to energy services, participation in energy decision-making and the allocation of energy's environmental and social costs.

**Keywords** Energy transitions • Political ecology • Knowledge • Scale • Democracy • Eco-sufficiency • Justice

### 11.1 Introduction

This chapter outlines a political ecology perspective on EU energy policy. Political ecology is an interdisciplinary approach to understanding and transforming human-environment relations. It focuses on how economic and political power shape social and environmental outcomes and is informed by both critical social theory and the experience of social movements. Political ecology is a reflexive (i.e. 'self-conscious') form of knowledge production. It pays close attention to how hegemonic power is sustained through scientific concepts and popular discourses around management of society-environment relations (e.g. scarcity, security, efficiency and risk). It also unsettles and problematises dominant forms of knowledge by generating alternative data and concepts, often through research on and with marginalised social groups.

We show in this chapter how a political ecology perspective not only asks different questions about energy policy but also poses a challenge to how energy policy traditionally has been done. Our account draws together several insights from political ecology research which, to date, has focused more on environmental policy and governance than energy per se. The political ecology perspective we offer involves grounded, empirically based assessment of how social power affects access to energy services, participation in energy decision-making and allocation of energy's environmental and social costs. It also encompasses a broader 'ecology of politics' (Huber 2015) that examines how the histories and geographies of energy stocks and flows reproduce social power (i.e. dominance and vulnerability) at a range of spatial scales.

## 11.2 A POLITICAL ECOLOGY PERSPECTIVE

Political ecology has deep and multiple roots. It draws in equal measure on critical social theory, historical materialism and the experience and knowledge of social movements seeking to redress historical patterns of social and environmental injustice. It coalesced as a recognisable body of thought in the 1970s and 1980s, as a critical response to technocratic and managerialist approaches to the environment and the obsession at the time with issues like overpopulation, resource scarcity and the carrying capacity of the Earth (Bridge et al. 2015). Its provocative coupling of two words from different traditions of thought directly challenges the supposedly 'apolitical' character of expert environmental management (Robbins 2011; M'Gonigle 1999). Political ecologists argue that mainstream scientific and managerial approaches to the environment fail to adequately question existing socio-economic arrangements, such as relations around gender, class and race, and historic patterns of dominance and marginalisation at different geographical scales. Consequently, they overlook the root causes of apparently 'environmental' problems which, political ecologists argue, are to be found in the unequal distribution of power within society. In this way, political ecology casts critical light on how conventional scientific and management approaches, through claims about expertise and scientific objectivity, often work to advance the interests of dominant classes and social groupings while keeping others marginalised. Political ecology offers, therefore, both an alternative account of the origins of environmental problems and a critique of the knowledge frameworks through which those problems are apprehended and solutions defined. Political ecology is a form of praxis—a unity of theory and practice orientated towards social change—and gives researchers a toolbox for critical and engaged analysis (Loftus 2017).

To date, there is little research on (EU) energy policy from a political ecology perspective. Researchers can draw, however, on two primary insights from political ecology's substantial record of work on environmental conflicts. First, political ecology highlights how flows of energy and raw materials ('socio-metabolism') create the conditions of possibility for economic and political power at a range of scales, from the geopolitics of international trade to relations of responsibility, autonomy and identity associated with energy consumption and citizenship (Huber 2015). It illuminates how social values, knowledge and political organisation have coevolved with growing energy consumption and how energy transition

involves not only substituting fuels or improving energy efficiency but also considering how energy systems and infrastructures create different political possibilities. Second, political ecology shows how the socio-political context of knowledge production shapes perceptions of the problem at hand and how this 'situated' character of knowledge influences the choices available for addressing and managing matters of concern. Political ecology breaks down the 'knowledge silos' of traditional economic or technical analyses (a feature it shares with other interdisciplinary initiatives, like sustainability science) but also challenges powerful hierarchies around assumed expertise: it highlights how calls for interdisciplinarity often overlook the wealth of 'lay' knowledge among those who live and work in and around sites of environmental crisis and conflict. In this way, political ecology expands the range of voices heard when researching energy and environmental policy issues, offering a distinctive 'view from below'. The alternative geographies, scales and histories originating from the experience of affected communities and environmental justice organisations can significantly enrich—and transform—policy analyses (Temper et al. 2018). Empirical findings and conceptual perspectives originating in these communities—with prominent energy-related examples include ecological debt, climate justice and degrowth—can be mobilised at regional, national and international levels to press for more ethical forms of public decisionmaking (Martinez-Alier et al. 2014).1

### 11.3 An Alternative Lens on EU Energy Policy

Conventional accounts of EU energy policy tell the story of policy trajectories 'from above'. They are contemporary versions of 'Chevalier's Dream', the century-long aspiration of building a modern Europe by 'Eradicating poverty, achieving independence from nature, and creating lasting peace' (Högselius et al. 2015). Most accounts focus, for example, on delivering an EU Energy Strategy and Energy Union that ensures 'secure, competitive and sustainable energy', integrating energy infrastructures through cross-border construction and harmonising network codes, expanding EU competencies in energy policy over time and/or unresolved scalar tensions between national interests and supranational objectives. What political ecology offers, in this context, is an alternative lens on the 'problems' at the heart of energy policy in the EU. This lens reveals some of the unspoken assumptions underpinning current energy policy and strategy, highlights how they limit possibilities for action and invites us to reformulate policy in different ways. Here we outline three such alternatives.

# 11.3.1 Towards Energy Sufficiency: Beyond Economic Growth and Ecological Modernisation

The historical materialist perspective at the heart of political ecology enables a critical reappraisal of mainstream narratives about Europe's past energy transitions, now embedded in political choices that present themselves as being in the interest of 'the people'. A core storyline about energy transition in Europe centres on the enormity of the energy leap that (western) European countries made after the Industrial Revolution (Kander et al. 2013). Once upon a time, the story goes, Europe was constrained by the scarcity of its natural resources relative to population. However, fossil fuels—coal first, then oil and natural gas—allowed Europe to escape this trap, grow rich and become a dominant force in the world economy. In this storyline fossil fuels were a necessary precondition for modern economic growth (MEG), where the term 'modern' implies simultaneous increases in population and per capita income (Barca 2011). More recently, a second storyline complements the core MEG narrative underpinning EU energy policy: ecological modernisation (EM). This centres on decreasing energy consumption per unit of GDP in the industrialised countries of western Europe, emphasising how this pattern, once generalised to developing countries, will lead to decarbonisation of the world economy (White et al. 2016). EM is now embedded in EU energy and environmental policies and in global climate policy, despite its shortcomings.<sup>2</sup> Together, MEG-EM storylines shape three important assumptions underpinning EU energy policies: that (1) growing levels of energy consumption are socially necessary (underpinning concerns about security of supply), (2) energy must be cheap to fuel economic growth (the significance of affordability) and (3) growing energy consumption can be compensated by 'dematerialising' the economy (the attention to decarbonising the energy sector). These assumptions are reflected in the EU Energy Strategy's top-level objective of ensuring 'secure, competitive and sustainable energy', as highlighted above.

A political ecology perspective on Europe's energy transition is premised on quite different narratives. Informed by studies of social and environmental history, political ecologists have studied the social, spatial, gender and environmental inequalities arising from MEG and EM processes, showing how Europe's energy transitions have been achieved through a global process of unequal exchange. For example, the first industrial revolution—centred on textiles—involved appropriating time

(labour) and space (land) associated with cotton and wool production outside Europe and displacing the environmental loads of fibre production to overseas colonies (Hornborg 2006). Similarly, the partial decarbonisation of (northern) European economies today is due to deindustrialisation and the relocation of carbon-intensive production elsewhere (Bumpus and Liverman 2008). Political ecology identifies how MEG and EM have given rise to ecological distribution conflicts and to struggles around knowledge, risk and precaution in the face of scientific/ technical uncertainties and for the recognition of rights and participation claims (Martinez-Alier et al. 2010). Historical research in political ecology, for example, has brought to light the key role of grassroots antinuclear mobilisation in southern Europe during the 1970s and 1980s, overlooked by previous research because it did not correspond to the postmaterialist model of 'new social movements' postulated by Political Science (Barca and Delicado 2016). Research has also given a critical account of the high-risk politics of hydropower in Italy and Spain, as driven by powerful economic interests with disregard for the vernacular knowledge and safety of local communities (Huber et al. 2016).

Work like this can reformulate the goals of EU energy policy. Instead of pursuing cheap, secure and clean energy, it steers attention towards ecosufficiency and prospects for degrowth. The former implies reducing consumption to ensure equal access to sufficient means of production within the limits of ecological reproduction (Salleh 2009); the latter posits all societies, starting with the wealthiest, should disengage from practices that accelerate the throughput of energy and resources (Petridis et al. 2017). Degrowth and eco-sufficiency offer striking alternatives to the policy triplet of 'secure, competitive and sustainable energy'. They prioritise reductions in consumption in addition to pursuing 'clean energy' (a strategy that, on its own, legitimises land and water grabbing) and consider energy a social 'commons' to be shared, rather than secured and commodified. As a consequence, degrowth and eco-sufficiency challenge institutional and cultural practices around energy at both supranational (EU) and national levels.

# 11.3.2 From Consumers to Citizens: An Expanded Sense of Identity and Demands

Political ecology's grounded and 'bottom-up' approach to formulating the problems and solutions that lie at the heart of energy policy reveals a repertoire of identities, perceptions and demands. It exposes the mythical

figure of the 'average consumer' that permeates EU energy policy and highlights how EU citizens have multiple demands for energy system change that exceed those of decarbonising, securing and making energy more competitive. Political ecology identifies the multiple reasons people protest and resist, the 'communities' of shared experience that form around energy infrastructures and the way these communities give voice to a rich set of alternative imaginaries (see Genus et al., Chap. 9 in this collection, for definition) around energy provision that include calls for responsibility, autonomy and sovereignty. A key demand from citizens centres on energy democracy—the anti-nuclear and anti-fracking movements are examples—so that, when it comes to 'power to the people', it is voice rather than kilowatts that people demand (Burke and Stephens 2017). Communities frequently draw a clear link between distributional concerns (e.g. environmental health and security) and claims for recognition (the defence of basic human rights and territorial rights) and/or participation in decision-making. For example, communities challenging energy projects—such as the Trans Adriatic Pipeline (TAP) supported by the European Investment Bank<sup>3</sup>—often face police violence and have their concerns dismissed as 'NIMBYism'. Political ecology takes seriously the demands of these place-based social movements and their capacity for envisioning new transition pathways that promote environmental sustainability and social justice. Communities that form around energy infrastructure and energy policy are not necessarily progressive: infiltration of the renewable energy sector by mafia groups, profiting from subsidies available exclusively to domestic users and farmers (Caneppele et al. 2013) or facilitating landgrabs, underlines the importance of focusing on power relations and structural inequalities while enabling a more people-centred and democratic energy system.

A closer look at conflicts around EU-related energy projects indicates the role such struggles might play in guiding energy choices. The map of the imagined community of 'Blockadia' in the Environmental Justice Atlas is a case in point: compiled by a network of political ecology researchers, it brings together worldwide cases of people defending their land, livelihoods and climate from fossil fuel projects, through direct action such as blockades, occupations and street protests. <sup>4</sup> Maps like these can reveal the spatial 'cost-shifting' problem (Kapp 1963) inherent to the long-distance supply chains associated with EU energy security policies. EU energy policy may be increasingly directed towards renewables at the regional level, but the larger picture involves significant investment in and

support for fossil energy supply lines (e.g. oil and gas pipelines and LNG import terminals). Inspired by long-standing social movements against fossil fuel extraction, such as the Ogoni People in the Niger Delta and the Yasuni initiative in Ecuador, communities enmeshed in the EU's fossil fuel (and biomass) supply lines are increasingly demanding these fuels remain in the ground. Acts of resistance at the 'sharp end' of energy policy implementation are diverse and widespread. They include, for example, the Ende Gelände mass civil disobedience in Germany, mobilisation against offshore drilling in southern Portugal and pan-European activist networks such as Gastivists and Europe Beyond Coal.<sup>5</sup>

# 11.3.3 Navigating a Multi-scalar World

The tensions and possibilities associated with different geographical scales of action around energy have been central to the project of closer European integration from its beginning, in the form, for example, of the European Coal and Steel Community (Treaty of Paris, 1951) and the European Atomic Energy Community (1957). The Lisbon Treaty (2007) and EC initiatives like the Third Energy Package (2009) affirm these supranational objectives, although a 'major paradox of EU energy policy (remains) the tension between national sovereignty over the energy sector and a community perspective based on solidarity, cooperation and scale' (Szulecki et al. 2016, p. 548). The European Commission now seeks a 'multilevel' approach to energy and climate governance that includes 'the power of bottom-up action', acknowledging the role of cities and local authorities in building resilience and achieving low-carbon transition.<sup>6</sup> A political ecology perspective affirms the significance of geographical scale but, importantly, reconceptualises its relation to energy policy. Rather than an administrative tension centred on fixed scales (e.g. supranational, national, municipal), political ecology understands scale as the outcome of (contested) social processes. Cross-border energy investment, the connections and disconnections made by energy infrastructure and the alliances and solidarities forged by social movements *create* scales of energy production, consumption and governance.

Thus, political ecology identifies a more complex and fluid scalar world than is represented in most policy analysis. Failure to acknowledge how social processes produce scale—and how prevailing scales express and serve the interests of those actors able to establish and entrench them—can lead to a 'scalar trap' (Brown and Purcell 2005): the assumption that

one particular scale is a priori more capable of providing desired outcomes (e.g. encouraging democratic participation, giving voice to marginalised populations, equitably distributing benefits). This is a significant insight, given efforts within the EU to distribute governance 'downward', from international and national to subnational, regional and urban scales. Political ecology research indicates such 'shifts' in governance are often less empowering than they first appear. Rather than giving local communities a voice in formulating and implementing policies, they can entrench decision-making power at a national level while saddling local and regional actors with responsibilities for implementation (Cohen and Bakker 2014). There is some evidence for this around current EU climate change policy following the Paris Agreement, where different roles are assumed for actors at certain scales. For example, national governments 'launch initiatives' and set agendas, while cities and civil society are responsible for implementing emission reductions, planning for and building resilience and finding ways to encourage investment. In this context, the Commission's embrace of 'bottom-up action' can be interpreted as a 'flanking mechanism'—a common phenomenon in the context of neoliberal governance—in which national governments encourage civil society actors to provide services (often services that cushion against the destructive effects of open markets) which might otherwise be provided by government, as a means of reducing government 'interference' and freeing up markets (Castree 2008). Political ecology research suggests more democratic and egalitarian policy outcomes can be achieved if marginalised communities are able to engage in 'scale jumping'-moving outside of scalar hierarchies, circumventing gatekeeping mechanisms and making their voices heard on a broader scale.

#### 11.4 Conclusion

Political ecology is a well-established interdisciplinary Social Science field with a record of work in relation to environmental policy and management. Its orientation towards bringing about emancipatory forms of social and environmental change through the generation of new knowledge builds on a tradition of critical thought and praxis. It is internally diverse, having been shaped by several different intellectual traditions and grounded concerns (e.g. air and water pollution, land dispossession, hazards and risk), although we have drawn out unifying themes in the interests of developing a political ecology perspective on EU energy policy.

Political ecology's critical perspective challenges many of the premises of EU energy policy; its way of working with affected communities—and the value it attributes to their knowledge, concepts and demands—offers an alternative to 'top-down' policy accounts. Implementing a political ecology perspective through research can open up new ways of thinking about the objectives, assumptions and methods of energy policy in the EU: in this sense, it can be a powerful tool in the collective effort to craft sustainable and socially just energy futures. At the same time, political ecology is also alive to how conceptual innovation and new knowledge can also be co-opted to preserve, rather than dissolve existing structures of social power: it is, therefore, always in (creative) tension with the formal apparatus of policy.

We suggest a political ecology perspective on EU energy policy can be pursued simultaneously at several levels. It can involve research with affected communities as outlined above; deconstructing energy policy's objectives, discourses and guiding concepts; or working creatively with frictions and alternative agendas already present in policy, such as the inclusion of demand moderation alongside the older language of energy efficiency in the Commission's Framework Strategy for a Resilient Energy Union (2015). Finally, a political ecology perspective can also require getting closer to the process of energy policy implementation by the Commission and Member States, to understand how social power is reproduced (and how it may be challenged) through institutional, epistemic and market mechanisms.

Acknowledgements We wish to thank three anonymous reviewers, the editors, Magdalena Kuchler and Antti Silvast for helpful comments on the first draft and colleagues from CES at the University of Coimbra who participated in the workshop. We also acknowledge ENTITLE, European Network in Political Ecology (www.politicalecology.eu), an FP-7 funded Initial Training Network under the Marie Curie Actions (contract no. 289374) which initiated the authors' collaboration.

## Notes

1. The potential of this perspective may be glimpsed in the European Environment Agency's *Late Lessons from Early Warnings* reports, on the environmental and public health impacts associated with asbestos, benzene, sulphur dioxide and radiation from Chernobyl and Fukushima. They show how traditional divisions of scientific knowledge and misplaced certainty created a 'recurring nightmare' in which short-term interests triumphed over long-term collective vision (Harremoës et al. 2001; EEA 2013).

- 2. Among these shortcomings are a blindness to the Jevons paradox, the counter-intuitive way in which gains in efficiency via technological change end up expanding (rather than decreasing) resource consumption (originally noted by British economist William Stanley Jevons in the nineteenth century).
- 3. See https://ejatlas.org/conflict/trans-adriatic-pipeline-in-puglia-italy.
- 4. See www.ejatlas.org. The term Blockadia originates in the movement against the Keystone XL pipeline in the US. It was later popularised by Naomi Klein who, in her book *This Changes Everything (2015)*, describes it as the 'roving transnational conflict zone [...] where 'regular' people are stepping in where our leaders are failing'.
- 5. For details see https://www.ende-gelaende.org/en/; http://www.gastivists.org/; https://beyond-coal.eu/.
- 6. Commission Communication 2016/110/EC (02 March 2016) The Road from Paris: assessing the implications of the Paris Agreement and accompanying the proposal for a Council decision on the signing, on behalf of the European Union, of the Paris agreement adopted under the United Nations Framework Convention on Climate Change.

### References

- Barca, S. (2011). Energy, Property, and the Industrial Revolution Narrative. *Ecological Economics*, 70(7), 1309–1315.
- Barca, S., & Delicado, A. (2016). Anti-nuclear Mobilization and Environmentalism in Europe. A View from Portugal, 1976–1986. *Environment and History*, 22(4), 497–520.
- Bridge, G., McCarthy, J., & Perreault, T. (2015). Editors' Introduction. In T. Perreault, G. Bridge, & T. McCarthy (Eds.), The Routledge Handbook of Political Ecology (pp. 3–18). London: Routledge.
- Brown, J. C., & Purcell, M. (2005). There's Nothing Inherent About Scale: Political Ecology, the Local Trap, and the Politics of Development in the Brazilian Amazon. *Geoforum*, 36, 607–624.
- Bumpus, A. G., & Liverman, D. (2008). Accumulation by Decarbonization and the Governance of Carbon Offsets. *Economic Geography*, 84, 127–155.
- Burke, M. J., & Stephens, J. C. (2017). Energy Democracy: Goals and Policy Instruments for Sociotechnical Transitions. *Energy Research & Social Science*, 33, 35–48.
- Caneppele, S., Riccardi, M., & Standridge, P. (2013). Green Energy and Black Economy: Mafia Investments in the Wind Power Sector in Italy. *Crime, Law and Social Change*, 59(3), 319–339.
- Castree, N. (2008). Neoliberalising Nature: The Logics of Deregulation and Reregulation. *Environment and Planning A*, 40, 131–152.
- Cohen, A., & Bakker, K. (2014). The eco-scalar fix: rescaling environmental governance and the politics of ecological boundaries in Alberta, Canada. *Environment and Planning D: Society and Space, 32*(1), 128–146.

- EEA. (2013). Late Lessons from Early Warnings: Science, Precaution, Innovation. Copenhagen: European Environment Agency.
- Harremoës, P., Gee, D., MacGarvin, M., Stirling, A., Keys, J., Wynne, B., & Guedes Vaz, S. (2001). Late Lessons from Early Warnings: The Precautionary Principle 1896–2000, Environmental Issue Report (Vol. 22). Copenhagen: European Environment Agency.
- Högselius, P., van der Vleuten, E., & Kaijser, A. (2015). Europe's Infrastructure Transition: Economy, War, Nature. London: Springer.
- Hornborg, A. (2006). Footprints in the Cotton Fields: The Industrial Revolution as Time–space Appropriation and Environmental Load Displacement. *Ecological Economics*, 59, 74–81.
- Huber, M. (2015). Energy and Social Power—From Political Ecology to the Ecology of Politics. In T. Perreault, G. Bridge, & T. McCarthy (Eds.), *The Routledge Handbook of Political Ecology* (pp. 481–492). London: Routledge.
- Huber, A., Gorostiza, S., Kotsila, P., Beltrán, M. J., & Armiero, M. (2016). Beyond "Socially Constructed" Disasters: Re-politicizing the Debate on Large Dams Through a Political Ecology of Risk. *Capitalism Nature Socialism*, 28(3), https://doi.org/10.1080/10455752.2016.1225222.
- Kander, A., Malanima, P., & Warde, P. (Eds.). (2013). Power to the People. Energy in Europe Over the Last Five Centuries. Princeton: Princeton University Press.
- Kapp, K. W. (1963). Social Costs of Business Enterprise (2nd Enlarged ed.). Bombay and London: Asia Publishing House.
- Loftus, A. (2017). Political Ecology I: Where Is Political Ecology?. *Progress in Human Geography*. https://doi.org/10.1177/0309132517734338.
- M'Gonigle, R. M. (1999). Ecological Economics and Political Ecology: Towards a Necessary Synthesis. *Ecological Economics*, 28(1), 11–26.
- Martinez-Alier, J., Kallis, G., Veuthey, S., Walter, M., & Temper, L. (2010). Social Metabolism, Ecological Distribution Conflicts, and Valuation Languages. *Ecological Economics*, 70(2), 153–158.
- Martinez-Alier, J., Anguelovski, I., Bond, P., Del Bene, D., Demaria, F., Gerber, J.-F., Greyl, L., Haas, W., Healy, H., Marín-Burgos, V., Ojo, G., Porto, M., Rijnhout, L., Rodríguez-Labajos, B., Spangenberg, J., Temper, L., Warlenius, R., & Yánez, I. (2014). Between Activism and Science: Grassroots Concepts for Sustainability Coined by Environmental Justice Organizations. *Journal of Political Ecology*, 21, 19–60.
- Petridis, P., Muraca, B., & Kallis, G. (2017). Degrowth: Between a Scientific Concept and a Slogan for a Social Movement. In J. Martínez-Alier & R. Muradian (Eds.), *Handbook of Ecological Economics* (pp. 176–200). Cheltenham: Edward Elgar.
- Robbins, P. (2011). *Political Ecology: A Critical Introduction*. Hoboken: John Wiley and Sons.
- Salleh, A. (Ed.). (2009). Eco-Sufficiency and Global Justice: Women Write Political Ecology. London: Pluto Press.

- Szulecki, K., Fischer, S., Gullberg, A., & Sartor, O. (2016). Shaping the 'Energy Union': Between National Positions and Governance Innovation in EU Energy and Climate Policy. *Climate Policy*, 16(5), 548–567.
- Temper, L., Demaria, F., Scheidel, A., Del Bene, D., & Martinez-Alier, J. (2018). The Global Environmental Justice Atlas (EJAtlas): Ecological Distribution Conflicts as Forces for Sustainability. *Sustainability Science*, *13*(3), 573–584.
- White, D., Rudy, A., & Gareau, B. (2016). Environments, Natures and Social Theory. Towards a Critical Hybridity. London: Palgrave Macmillan.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (http://creativecommons.org/licenses/by/4.0/), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

