

## Introduction

### Beginnings

A series of thoughts frame this book. First, ‘we inhabit a *nomos* – a normative universe’.<sup>1</sup> As will become clearer, my image of the *nomos* refers to the idea that ‘nature’ – animals, plants, the Earth, and so forth – produces its own values and norms, and that human norms are part of this natural *nomos*. Second, the *nomos*, or normative universe, emerges from material processes but cannot be reduced to them in any mechanical sense. That is, norms emerge from the movement and interactions of matter at cosmic and geological scales, within life, and across ecosystems.<sup>2</sup> Third, emergent normativity is contingent yet stable and therefore accumulative (or, in social terms, historical) and constantly diversifying. This leads, fourth, to normalities and systems that are plural, complex, and intersecting, in short, that are ontologically entangled.<sup>3</sup> Relationship across normative scales (life, meaning, bodies, state law, microbes, Earth) is ubiquitous – the normative universe is interconnected and layered, not separated into bits. Legal systems and other human legalities are embedded within this universe, not separate from it. And finally, whilst normativity is in one sense co-existent with order, in fact order and disorder are not distinct, but are always co-implicated. Normativity implies sameness but relies upon difference, just as order implies system but relies upon disorder or chaos.<sup>4</sup>

I use the term ‘ecolaw’ to denote this interconnected and plural *nomos*. Ecolaw is not human law that governs the environment or ecosystems. It is not law for the Anthropocene or any system of legal governance at all.<sup>5</sup> It is an attempt to radically expand the referent of ‘law’ so

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<sup>1</sup> Cover 1983, 4; see also Delaney 2010 (on the *nomosphere*). Although ‘nomos’ is singular, for reasons of simplicity I sometimes use the term (ungrammatically) to denote a plurality of normative worlds. Moreover, I primarily use the term *nomos* in the sense in which it appears in contemporary legal theory, that is, to mean *law* and/or *convention*, sidestepping what Zartaloudis (2019, 20) – in his extraordinarily detailed and fascinating study of archaic forms of two antecedent terms (*nómos* and *nomós*) – calls its ‘polyvalent forms and uses, which, in fact, do not lend themselves to universal definitions.’

<sup>2</sup> Cf Bickhard 2004, who locates the ‘base’ of normativity in life. It seems clear, however, that developments in self-organising complex systems, including nonliving systems, put the ‘base’ of normativity well beyond life. See Chapter 4.

<sup>3</sup> Bartel 2017; Davies 2017b. Studies about the law–nature entanglement or co-becoming in particular fields are numerous. They include Pottage 1998; Gibson 2020; Arup 2021; Braverman and Johnson 2020.

<sup>4</sup> Prigogine and Stengers 1984; Prigogine 1997.

<sup>5</sup> Anthropocene-engaged legal theory edges much closer to my meaning, but still often has the tendency to relapse into thinking of law as *responsive* to Earth systems or as still regulatory over the Earth or planet as object.

that it is no longer an exclusively human system or plurality of human systems but unfolds with the matter of the universe (more particularly, of Earth). Thus, rather than expand legal subjectivity to animals and other natural objects, I aim to position law and normativity in general as ontologically prior to the designation of subjects and objects: everything becomes subject *and* object within plural normative relationships. Human beings are both subject and object in different normative worlds.<sup>6</sup> For instance, we are objects of a viral subjectivity even as we objectify viruses.

The distinction between, on the one hand, human law that regulates objects and, on the other, law that is emergent from interrelating things is critical. Much has been made in recent theory of Foucault's notions of biopower and biopolitics as the governance of life and of bodies by human regulatory systems. As Elizabeth Grosz explains, for Foucault 'biopower regulates a body from the outside'.<sup>7</sup> She points out that an alternative idea of biopower could refer to 'the powers that operate in and through living bodies'.<sup>8</sup> Although he did not deploy such a notion of *biopower*, Grosz reads Foucault as suggesting that *geopower* is power that is embedded in the Earth: 'Rather than concede geopower as the power that humans can extract from or hold over the geological, he sees geopower as the forces of the earth.'<sup>9</sup> With 'ecolaw' (and the sub-categories of 'geolaw' and 'biolaw') I aim to make an aligned distinction – the term does not refer to the limited domain of human law that *governs* life and the Earth, but rather to the unlimited domain of law that *emerges* from life and the Earth. Ecolaw connects biolaw, geolaw, and indeed human law. It requires a connection of legal theory with the science theory of recent decades. Science theory is in the process of supplementing mechanical laws involving deterministic cause–effect sequences with more probabilistic laws that engage agency, purpose, and constrained choice.<sup>10</sup> These developments make the connection of human law with the laws of nature much more credible, even unavoidable. In keeping with my previous work, I do not make a firm distinction between 'law' and 'norm'<sup>11</sup> – what is known in western legal theory as formal state-based law is emergent from, reliant upon, and ultimately blended into an extended *nomos* in all of its plurality and materiality.

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<sup>6</sup> In some ways a legal prioritising of obligations over rights implies the priority of object status over subjectivity. See eg Davies 2016; Birrell and Matthews 2020.

<sup>7</sup> Grosz et al. 2017, 134.

<sup>8</sup> Ibid.

<sup>9</sup> Ibid.

<sup>10</sup> See eg Prigogine and Stengers 1984; Prigogine 1997.

<sup>11</sup> Davies 2017b.

In situating law in nature, there are undoubtedly some superficial parallels between what I present in this book from a western perspective and the knowledges of Indigenous peoples in Australia and elsewhere. I have drawn considerable inspiration and some terminology from the clarity and depth of Indigenous writing, artworks, and storytelling in communicating the connectedness of people to land and the emergence of law from land and relationships.<sup>12</sup> One motivation in writing this book is to help reorient western and in particular Anglo legal theory so that it is both more receptive to Indigenous knowledges and capable of acknowledging that many western ‘discoveries’ have been understood all along by Indigenous peoples, albeit in different forms.<sup>13</sup> With a few exceptions, however, I do not specifically draw on Indigenous sources. My purpose is not to construct a hybrid or synthesized version of the law–nature connection or even to specifically engage with the many forms of Indigenous knowledge, but rather to bring together resources within western philosophy and science theory for a narrative of ecolegality that is – like all eco-things – adaptive and adaptable. Any parallels therefore must be treated very carefully – my own theoretical outlook is situated within western theory and fails to touch on many significant dimensions of the rounded knowledges held by Indigenous peoples – the sacred, the located, the holistically embedded, the responsibilities of living. In addition to these limitations, my own theoretical horizon emerges from a genealogy still imbued with colonial and imperial attitudes, at the same time as I endeavour to resist these attitudes.

It is not possible to theorize human law as part of the extended *nomos* of physical nature without knowing anything certain about the latter. This poses a problem, as I have no background in science or science theory. Fortunately, there exists whole worlds of philosophy and theory undertaken by scientists, most of which is little studied in legal theory.<sup>14</sup> Perhaps even more evocatively, science practitioners are now more than ever writing about the philosophical meanings of their discoveries and hypotheses.<sup>15</sup> The book is an endeavour, in a partial and preliminary way, to bring styles of thought into legal theory that have originated in science but are not necessarily bound to it as a paradigm.

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<sup>12</sup> The central inspiration is the understanding of connectedness of law with land. One term I use throughout the book is ‘co-becoming’, which I first encountered in Bawaka Country et al 2016; other particular influences include Kwaymullina and Kwaymullina 2010 and the many works of Irene Watson (2000 and 2017, among many others).

<sup>13</sup> See eg Robinson and Raven 2020.

<sup>14</sup> With notable exceptions, of course, such as Donna Haraway, Bruno Latour, and Karen Barad.

<sup>15</sup> See for example Gagliano 2018b.

## Argument

The story about law, nature, and normativity that I present in this book therefore begins with the order, disorder, adaptive properties, and emergent nature of earthly existence, both living and nonliving. The laws of nature and human law have in Western theory often been regarded as radically different: on the one hand causally deterministic and necessary and on the other created intentionally and entirely contingent. But these particular meanings of ‘law’ are extremes. Human and nonhuman nature is more characteristically constituted by patterns that are ‘normative’ in the sense that they are comprised of continually emerging norms. Rather than focus on organisms, assemblages, or ecosystems, my emphasis is on understanding the norm-creating iterations and bonds that both create and disrupt the patterns of life and nonlife. To recap, to think of nature as normative means that it consists of a multiplicity of norms that have emerge from its many intersecting and unfolding processes.<sup>16</sup> A norm is a a pattern, standard, or direction, that is also a guide for action. My working idea, to be elaborated more fully in the following chapters, is that norms – both legal and nonlegal, human and nonhuman – are iterative, connective, and teleological. That is, norms are the product of iteration or continued usage – things being done, thought, or spoken the same way repeatedly, though always accompanied by the potential for difference.<sup>17</sup> Norms are pathways created by usage or movement:<sup>18</sup> they guide action but do not mechanically determine it. But norms also arise from exchanges, relationships, and bonds between organisms and between bits of matter.<sup>19</sup> Bonds constitute and differentiate. They are ligatures, obligations.<sup>20</sup> To use the legal terminology, norms, both human and nonhuman, are therefore basically habitual (customary) and contractual.<sup>21</sup> Finally, norms are aligned with and motivated by purposes, even if – in many instances – the purpose is forgotten, minimal, or buried. Teleology – purpose-driven action or action that follows a direction – as I will outline, is normative. It motivates norm creation. Norms, as opposed to the laws of physics, are always contingent in the sense that they could

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<sup>16</sup> For the living, such processes include evolution, adaptation, acculturation, symbiosis, learning, communicating, storytelling, and many others. For the nonliving, norm-creating processes are associated with the movements of matter and energy – various forms of flow, for instance.

<sup>17</sup> See eg Uexküll 1934/2010, 98ff (‘The Familiar Path’).

<sup>18</sup> Davies 2017b, 144-153.

<sup>19</sup> Serres 1992, 38; Latour 2017, 64; Margulis 1967; 2010.

<sup>20</sup> As Karen Barad 2010, 265 says: ‘Entanglements are not a name for the interconnectedness of all being as one, but rather specific material relations of the ongoing differentiating of the world. Entanglements are relations of obligation – being bound to the other – enfolded traces of othering.’ See also Yusoff 2013.

<sup>21</sup> Intentionally-created norms and laws are an exceptional and derivative, rather than a central or original, case of norm: norms that are intentionally created always rest on existent norms already established by conventions and relationships.

have developed otherwise. Moreover, they do not lead to determined results – there can always be, and often are, deviations, sometimes leading to new norms.<sup>22</sup>

The critical task for an ecological understanding of law is to replace law's objectifying and distinguishing strategies with an understanding of law that places it within the relationships that create it (along with everything else physical and conceptual). In order to elaborate this position, I take the extremes of physical nature and human law in the western tradition and, as it were, fill the gap that philosophy and legal theory has created and enforced between them by comparing their form and elaborating the position that what is understood as human positive law is entirely continuous with or situated within the physical world. What westerners understand as 'law' is in part a reduction and cross-section of material processes, though this materiality must also be understood as constituted through historical and cultural dynamics.

### Law in/as Nature

'Material' is a complex word – it resonates with *matter*, which is also constrained energy,<sup>23</sup> as well as with meaning, which is of the mind, but is no less material for being so.<sup>24</sup> Materiality is not static but moves according to a tempo specific to its spacetime and metabolism. What thinkers in the western tradition have understood as 'nature' is equally, if not more, problematic and encompasses (among other things) various models of human nature, pastoral versions of the natural world found in nineteenth-century romanticism, misogynist and racist ideas that associate women and non-white people with a passive physical world and a non-rational animality, as well as the objectified 'factual' physical nature of natural science.<sup>25</sup> Both 'law' and 'nature' are cultural constructs that are intended to refer to something 'real' but the characteristics of the reality and the narratives that constitute these constructs, not to mention the endlessly mobile human position as situated agent in this web of natural–legal materialities, make this a difficult set of relationships to untangle.

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<sup>22</sup> See in particular the discussion of Canguilhem in Chapter 3.

<sup>23</sup> See the explanation of this point in Frost 2016, 31–41. Frost 2016, 35 says: 'What we know or experience as matter is energy whose differentiation produces highly constrained forms of self-relation. Those highly constrained forms of energetic self-relation are the conditions for the generation of various forms of extension, density, endurance, and dimension, some of which are beyond human perception but some of which we humans experience as heavy, light, staid, evanescent, solid, fluid, airy, opaque, or transparent.' See also Barad 2012.

<sup>24</sup> On the 'entanglement of matter and meaning' see generally Barad 2007. See also Ahmed 2008, discussing Butler 1993, 33.

<sup>25</sup> Classic critiques of the nature–culture division with all of its scientific mythologies and gendered/racist connotations include Merchant 1980; Lloyd 1984; and Plumwood 1993.

My argument situates what is understood in mainstream legal theory as the separate sphere of law in its ecological context. I intend to describe and illustrate the myriad ways in which the reified ‘law’ of the state and its institutions is produced by its material, including its biological, surroundings and to give texture and dimensionality to its pluriversal qualities. A similar argument has been made – repeatedly – about the ways in which law is a product of social (that is, human) relationships and performances.<sup>26</sup> However, once matter is fully engaged in a theoretical analysis it is very difficult – impossible actually – to sever the nonhuman from the human. Over the past decades, legal geographers have been at the forefront of moving beyond the human and exploring the emergence of law from place, an emergence that is necessarily dynamic and hence temporal.<sup>27</sup> Such work theorizes humans and our legal performances as embedded first and foremost within places, together with the multidimensional materialities of specific localities. This book takes a slightly different slice of materiality (the biological, the ecological, and the geological) but retains the focus on understanding the nature of law and normativity that I have previously pursued.

Situating human law within the broader socio-ecological (including geological and potentially cosmic) does not mean that there is any straightforward relationship between the norms of nature and the norms and laws of human societies. Scientific narratives, like philosophy and social theory, have often reflected the grand assumptions and preferences of modernism, now in the process of being displaced by more complex narratives:<sup>28</sup> prominent examples include the Cartesian story that nonhuman nature is mechanical;<sup>29</sup> the individualizing tendencies of liberal thought reflected in organism-centric investigations of life;<sup>30</sup> or the sovereign governance model once attributed to the genome.<sup>31</sup> Darwin’s comments about the ‘struggle for existence’ are a fascinating case in point. Is this a struggle against other individuals for scarce resources or is it a collective struggle in difficult conditions? Or is it something of both? In ‘Kropotkin was no Crackpot’ Stephen Jay Gould documents a divergence between early twentieth-century Anglo-American and Russian evolutionary theory which, to a degree,

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<sup>26</sup> I have elaborated this position at length in Davies 2017b, but it had already been asserted by generations of legal realists, legal consciousness scholars, and certain legal pluralists. See eg Llewellyn 1931; Ewick and Silbey 1998; Sarat 1990.

<sup>27</sup> Blomley 2003; 2013; Delaney 2010; Bartel 2017; Graham 2011; Braverman et al 2014; Philippopoulos-Mihalopoulos 2015; Bartel and Graham 2016; T O’Donnell et al 2020; Braverman and Johnson 2020.

<sup>28</sup> Turner 2013, 189 says ‘it would be fair to say that scientific, social, and political spheres were all shaped together by a peculiar mutualism’. See also Stengers 2010; 2011.

<sup>29</sup> Henning and Scarfe 2013.

<sup>30</sup> Gilbert et al 2012.

<sup>31</sup> See eg Lappé and Landecker 2015; de Leeuw and van Wichelin 2020; Dupré 2013, 32.

followed geo-political tendencies.<sup>32</sup> Evolutionary theorists in the Anglosphere emphasized the struggle as a competitive battle primarily conducted by individuals (and, later in the century, by their selfish genes). By contrast, the early Russian followers of Darwin took a different approach, acknowledging individual struggle, but also looking for collectivism, co-operation, and, in Kropotkin's terms, 'mutual aid'.<sup>33</sup> Kropotkin's anarchism was directly informed by his appreciation of the advantages of collectivism in evolutionary struggle.<sup>34</sup> It appears that, for Kropotkin, animal nature was not only a model for the possibilities of human politics, but also continuous with it.

At the same time, human law clearly cannot be deduced isomorphically from a 'book' of natural meanings like a medieval bestiary. Just as narratives embedded in human cultures (for instance to do with competition or co-operation) cannot be used simply as an interpretive lens for nature, nor can natural norms be translated directly into the human socio-legal sphere. This is not to say that the norms of the natural world are never instructive. Sometimes, for instance, they can be used to cast doubt on human prejudices, such as the alleged alliance between heteronormativity and nature. Nonhuman sex and sexuality prove to be far more complex than human heteronormativity.<sup>35</sup> The territorial behaviours of certain animals are highly suggestive for thinking about human constructions of territory and property.<sup>36</sup> Georges Canguilhem, whose work I use frequently in this book, distinguished human law from the vital norms of organisms more sharply, arguing that the latter are 'immanent, present without being represented, acting with neither deliberation nor calculation'.<sup>37</sup> The normative pluralities that form an organism (or superorganism, or holobiont) are not consciously chosen or followed. They emerge without reflection. Human law, by contrast, can be identified, represented, intentionally followed (or not), and reformed. This workable conceptual distinction between the immanent norm and the representable is not, however, so easily maintained in a material sense, given that all human law is established upon the grounds of both culturally embedded (and therefore neither immanent nor external) human norms as well as nonhuman norms that are the product of billions of years of accumulated planetary change.<sup>38</sup> It is true that human

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<sup>32</sup> Gould 1988, with reference to Todes 1987.

<sup>33</sup> Kropotkin 1902. Lynn Margulis 2010 based her work on symbiosis on the earlier work of Russian microbiologists, which had been largely ignored in the Anglosphere.

<sup>34</sup> Dugatkin 2011.

<sup>35</sup> See eg Hird 2006 (on 'animal transex'); Hird 2009, 91-115 ('microontologies of sex'); cf Barad 2010 on the queer properties of electrons.

<sup>36</sup> See eg Deleuze and Guattari 1987, 311-318; Gibson 2019, 105-131; Bradshaw 2020.

<sup>37</sup> Canguilhem 1966/1978, 154. See also Genel 2021.

<sup>38</sup> See eg Norman 2021, 116-118.

state-based law is produced through processes external to a single human body and that it can even be written down and digitized, but what of this? The human, after all, is already an assemblage of symbiotic and autopoietic processes and is, moreover, not only a being but a becoming,<sup>39</sup> an ongoing process of constitution from quite different materials. Law needs to be interpreted by different ‘minds’ which in themselves are materially shaped by the physical world,<sup>40</sup> and hence this separate human law potentially takes multiple forms. It achieves any stability it has only through the actions of human bodies acting in groups – through their conversations, arguments, decisions, written communications, and so forth. Externalized state-based law never escapes the immanent norms from which it has developed, whether these are at the quantum level, the cellular and microbial, the behavioural, or the cultural. The interactions and intra-actions that produce norms are rarely linear.<sup>41</sup> The multiple intersecting normative systems of a complex normative ecology produce disruptions, detours, and hybrid norms at every step of the way.<sup>42</sup> Thus it is never possible to reduce human culture, politics, and legal deliberation to nature, but nor is it possible to separate human beings and our natures from nonhuman nature. Plural normative systems form both continuities and discontinuities between normative matter and human meanings.

### Strategies and Methods

As I have already mentioned, ecosocial norms are produced by habits and bonds, by pathways and symbiosis, and have a purpose or direction in the sense that they give order to movement. There is a plurality of norms, a plurality of potential normative worlds, and a plurality of normative fields across biological, geological, and social (human and nonhuman) planes. The point of departure of this book is ecosocial:<sup>43</sup> it brings together the ecological and the human/social by viewing these multiple planes of normativity as connected and mutually constitutive, even though – for analytical purposes – they are frequently studied and analysed as separate. Since my disciplinary reference point is law and the social norms that inform law, I have extended a conceptual language of normativity that (in my view but not everyone’s)

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<sup>39</sup> Lambros Malafouris 2010, 49, for instance, uses the term ‘human becoming’ in his analysis of ‘metaplasticity’ – ‘the enactive, constitutive intertwining of neural and cultural plasticity’. See also Malabou 2008; Pottage 2015. I discuss autopoiesis and symbiosis/sympoiesis as they have been used in relation to law in Chapter 5.

<sup>40</sup> Malafouris 2010; 2013.

<sup>41</sup> ‘Intra-action’ is Karen Barad’s term for the actions or movements from which dynamic phenomena materialize. Rather than thinking of entities relating or interacting, intra-action names the continual connections that produce things as ongoing processes. Barad 2007, 137-141

<sup>42</sup> Cf De Landa 2000; Murray 2008; Ruhl 1996; Finchett-Maddock 2017; Murray et al 2019.

<sup>43</sup> Or ‘socio-ecological’. See generally Code 2006; Philippopoulos-Mihalopoulos 2013.



resonates with the legal sphere, even though it is not exclusively drawn from that sphere. This conceptual language does not apply in a straightforward way to other disciplines, especially not the biological and physical sciences. How then is it possible to bring law, human social norms, and the norms of the natural world into a common framework? Two related strategies inform my approach. First, I *compare* socio-legal normativity with nonhuman normativity: that is, I interpret nonhuman order using some of the conceptual tools of socio-legal thinking. The second angle involves developing an appreciation of the *continuity* of human and nonhuman normativity and a perspective that situates all human norms within a wider nonhuman context. My focus is continuity since, in this field, *discontinuity* is a given – but, in fact, here as elsewhere, continuity and discontinuity co-exist.<sup>44</sup>

In this way, my analysis relies on reading the concept of normativity across nonhuman settings in a way that scientists might find jarring or inaccurate – for obvious reasons, I do not claim to add substantive knowledge to the nonhuman world as such, only to frame scientific knowledge in a particular way and to use natural science as a ‘thinking ground’ for an approach to normativity in the living and the nonliving. Canguilhem said, ‘life is in fact a normative activity’.<sup>45</sup> And moreover, ‘[w]e do not ascribe a human content to vital [that is, living] norms but we do ask ourselves how normativity essential to human consciousness would be explained if it did not in some way exist in embryo in life.’<sup>46</sup> In other words, the interacting complexity of human normativity depends on a more basic biological normativity that exists well beyond the space occupied by the human being. Viruses, for instance, also have their norms, as they are driven to replicate and do so according to established patterns. These viral norms are clearly not separate from human life and human norms but rather interact with them, for better and for worse. Looking even further, past biology to nonliving processes, Ilya Prigogine said, ‘human creativity and innovation can be understood as the amplification of laws of nature already present in physics or chemistry’.<sup>47</sup> As I will outline in Chapter 4, Prigogine’s research in physical systems has allowed incredible depth and detail to be observed and understood in the continuities and connections between nonlife and life, and between nonhuman and human.

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<sup>44</sup> See eg Barad 2010 on quantum and queer ‘dis/continuity’.

<sup>45</sup> Ibid.

<sup>46</sup> Ibid. See also Barham 2012.

<sup>47</sup> Prigogine 1997, 71. The most detailed exposition of human–nonhuman dynamics using complexity theory that I am aware of is De Landa 2000.

How is it possible to understand this continuity of the normativity of the nonliving, the living, and the human within the terms offered by legal theory? The dominant assumption, practice, and idiom about law, derived from legal positivist theory, is that law is largely conceptual. Despite the inbuilt requirement that law *become* practical at some point, in this perspective law is nonetheless often regarded as having a life of its own as abstract: law's substance, though expressed via the physical medium of language and memorialized in permanent form as documents,<sup>48</sup> is regarded as mental and conceptual. Law may have its origins in social relationships but is conceptually detached from them. Strongly associated with the view that law can be distinguished from material practices, and in some way precedes them or governs them, is that it is singular and state-based – there is one law, one state and sovereign, one territory, one legal world. By contrast to top-down and conceptual approaches to state-based law, the pragmatic, sociological, and anthropological traditions in legal thought, as well as much of the critical tradition, are more likely to explain law as having a material basis: as emerging from the relationships of humans in their specific communities and located in place and time.<sup>49</sup> Even where formal law is recognized within such approaches as the construct of a politically superior institution and therefore somewhat autonomous from society at large, it is nonetheless situated in and interpreted by reference to social meanings and everyday practices that are necessarily place-emergent and historically located. As socio-legal thought extends legality beyond positive law, so eco-legal thought extends legality beyond the human.

My strategy for thinking through the continuity of normativity across these differentiated spheres is very straightforward. It simply involves a shift in orientation from a human-centric focus to a matter-centric focus. Looking past the taxonomies that enforce the human–nonhuman divide necessitates that we see that these spheres – while separable for some purposes – are nonetheless unified by matter and the processes that shape it. There is no getting away from human dependence on the physical world, living and nonliving, and, since this is the case, an explanation of law that is confined to the human is only telling part of the story of law. The *physicality* of human bodies conversing and acting with others – in physical locations, with and in relation to physical objects – is not always foremost or even present in positivist

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<sup>48</sup> The physical elements of language are often erased in theory, but it is helpful to remember that one of the critical early interventions of the 'linguistic' turn in theory concerned the materiality of language. See eg Coward and Ellis 1977; Derrida 1981b; Barthes 1972; Althusser 1994; discussed in Davies 2017b, 51–54.

<sup>49</sup> Ehrlich 1962; Pound 1910; Falk Moore 1973; Ewick and Silbey 1998; Cover 1983; Grbich 1992.

and even in critical socio-legal accounts of law, but is nonetheless necessary to them.<sup>50</sup> As I have mentioned, legal geography stands out among the critical traditions for integrating law with place, where both law and place are understood as comprised of matter and practices that are social, historical, and ecological. It therefore engages directly with the nonhuman and physical elements of the emergence of law. Theoretical approaches to law based on material practices tend to avoid depictions of law as logical, systematic, or singular: as emergent, law is necessarily based on diversity and contestation as well as on the singularizing and reifying impulses of its more abstract discourses.

In one sense, the point that human normativity is situated within natural normativity is obvious, even trite. If the human species is simply part of an extended biophysical sphere (an obvious point) then everything that is *of* the human sphere is also of the natural sphere. We humans are a subset of a larger set, represented diagrammatically as a circle within a circle rather than as a circle that intersects with another circle. But discussions about what is ‘right’ in a social or legal sense are often dissociated from the biological substratum of normativity, from the fact that life itself is a normative activity and that, as I will argue, norms and normalities are produced in nonliving matter as well. The dominant legal narrative about norms has been that they are independently authorized rules that a rational person can understand and decide whether to follow. However, social rightness must be emergent – at least in part – from already given bio-socio-cultural norms. To say that something is ‘emergent’ means that it is constantly in production from the complex interactions of a substrate – it comes from a set of material relationships and cannot be separated from them. This does not imply that the emergent thing is only the sum of its parts, rather the opposite.<sup>51</sup> So-called ‘moral’ norms, for instance, can be seen as the product of several intersecting and cumulative factors. These include: evolutionary adaptations that are themselves based on the iterative trial and error of reproduction and finding what works for a particular environment;<sup>52</sup> socio-cultural adaptations that are similarly responsive to place and environment; historical and economic transitions; intellectual rationalizations of social, political, and other (eg religious, economic, etc) characteristics; and politics and concentrations of power. To dissociate morality from human history, from long-

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<sup>50</sup> See eg Kelsen 1967, 2 (‘law – or what is customarily so called – seems at least partly to be rooted in [physical] nature and to have a “natural” existence’).

<sup>51</sup> For an extended discussion see Stengers 2011, 207–233.

<sup>52</sup> De Waal 2014. Joyce 2014 discusses the distinction between those who argue that moral judgements are the product of biological adaptations and those who argue that they are the product of psychological elements (which are themselves ‘quite possibly adaptations’) such as the ability to make abstractions, to see consequences, to understand the suffering of others, and general social instincts.

term adaptations to time and place, and from movements between organism and habitat, community and environment, seems to remove the preconditions for any notion of rightness.

Because the human being is an organism, and in fact a ‘living system’,<sup>53</sup> the material explanation of law cannot stop at merely *human* relationships. There is no boundary that can be drawn around the human organism in a material sense.<sup>54</sup> There are, of course, many discursive and mythological boundaries that have been placed around human organisms and human societies, especially in western thought. However, as we are seeing all around us, the image of isolation from our habitat and broader environment is a destructive myth. ‘We have never been individuals’ (as one biology article aptly puts it).<sup>55</sup> Law as an ecological phenomenon emerges from trillions of micro-actions of such living systems in specific places and times.<sup>56</sup> This constant activity, like the biochemical reactions that generate it, forms patterns and stabilities that over time materialize as ‘law’. There is nothing that is ‘law’ that does not emerge from this material context or that can be explained or understood without it. Even the most idealist and conceptual understanding of law cannot divorce it from the physical ‘natural’ world.<sup>57</sup> Everything that we refer to as ‘law’ emerges in a context of physical action even though it is reified into an abstract form.

### Chapter Outline

The chapters that follow expand upon these points. Because this is a short book, they are introduced and opened up for exploration, rather than thoroughly argued and defended. **Chapter 1** is essentially introductory. It begins by taking an apparently extra-legal biological phenomenon – slime mould – and considers a series of questions. How is it possible to conceptualize the relationship between slime mould and human laws? How is slime mould materially connected to human law? What are the normative qualities of slime mould? Can the idea of normative pluralism extend beyond plural human systems to nonhuman worlds? The

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<sup>53</sup> Maturana 2000.

<sup>54</sup> Frost 2016.

<sup>55</sup> Gilbert et al 2012; cf Norman 2021.

<sup>56</sup> Davies 2017b.

<sup>57</sup> For instance, the legal idealist Kelsen 1967, 2 had trouble removing law from its physical substance: ‘society, understood as the actual living together of human beings, may be thought of as part of life in general and hence of nature. Besides, law – or what is customarily so called – seems at least partly to be rooted in nature and to have a “natural” existence. For if you analyze any body of facts interpreted as “legal” or somehow tied up with law ... two elements are distinguishable: one, an act or series of acts – a happening occurring at a certain time and in a certain place, perceived by our senses; an external manifestation of human conduct; two, the legal meaning of this act, that is, the meaning conferred upon the act by the law.’ See Davies 2017b, 44–46.

second section of the chapter provides some further groundwork for the argument relating to the facticity and normativity of nature, and a more thorough explanation than that provided in this introduction of the (tentative) model of normativity used in this book. The third section of Chapter 1 consists of a brief overview of the bio-, geo-, and human registers of normativity.

**Chapter 2** turns to ideas of nature and teleology. ‘Nature’ is a highly contested term in theory and, in adopting the term, one can never hope to navigate fairly the many – and sometimes conflicting – meanings with which it has been invested. Nonetheless, and possibly imprudently, after consideration of some of these problems I forge on with using the term, largely because there is no viable alternative. Much of Chapter 2 sketches philosophical approaches to the question of whether (and how) the physical natural world can be said to be purposive or directed and hence teleological. As I have mentioned, purpose or direction is the critical motivator and defining feature of normativity whether manifested as making, following, accepting, resisting, or re-forming norms. Some appreciation of the history of the philosophy of teleology in nature is unavoidable. The chapter tracks in outline a trajectory starting with Aristotle to the rise of mechanistic anti-teleological thinking in the early modern era, to Kant’s discussions of the apparently teleological nature of organisms, and finishing with Schelling’s rejection of the objectification of nature.

Chapters 3, 4, and 5 follow a familiar (though intrinsically contestable) division of the material into the biological, the geo-logical/graphical, and the human.<sup>58</sup> **Chapter 3** considers two early twentieth-century bio-theorists who imagine different aspects of what it is to be a nonhuman being. Georges Canguilhem theorized the life of organisms as a process in which immanent bio-norms are constantly made and re-formed. He rejected the idea that there was an essential normality or static set of norms that could be used to characterize an organism. Rather, the norms of the organism’s ‘normal’ are made by the organism itself as it works to avoid suffering and enhance wellbeing. Hence ‘diversity is not disease’ but rather, possibly though not always, a stage in the creation of a new normal. Jakob von Uexküll offered an even more remarkable dimension to this imagining of what it is to be a nonhuman organism. He invited his readers into animal and insect worlds, imagining their *Umwelt* or subjective bubble of meaning, as it is formed through receiving perceptual signals from and engaging with external things. The resulting image of plural phenomenal worlds adds a second-order layer to the immanent bio-

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<sup>58</sup> See eg the structure of De Landa 2000.

norms described by Canguilhem. It is from the experience of interiority that arises in *Umwelt* that the plural semiotic worlds of living collectives arise; hence the emergence over eons of patterns that give rise eventually to cultures, exteriorized structures, institutions, and bureaucracies.

Normativity does not stop with life, and **Chapter 4** expands the analysis to nonlife. The chapter starts by considering some philosophical and scientific methods of distinguishing between life and nonlife: matters discussed include plasticity of form, different ways of occupying spacetime, the ability to self-organize, and causal determinacy. However, the material continuity of life and nonlife carries equal significance to the distinction between them. The other substantive section of the chapter looks at the image and actuality of material *flow* as a significant feature in the construction of norms. Although many things flow, I focus on water and energy. Water is perhaps the nonliving resource that to date has intersected most explicitly with western law via the recognition of nonhuman rights. But underpinning everything is energy dissipation, which can be attributed with a nascent and ongoing normativity across all Earth-bound processes.

I turn to human law in **Chapter 5**. More specifically, I look at some selected questions in legal theory that connect to the themes of the book – first, the materiality and relationality of what we understand as (hypothetically separate) positive law; second, the idea of nature in natural law theory; and finally the idea of legal co-becoming as it has been considered in socio-legal and more recent socio-ecological thought. This final section of the chapter also looks at autopoiesis as a biological metaphor for legal system closure and sympoiesis as an alternative biologically grounded language for the co-construction of human–nonhuman normativity.<sup>59</sup>

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<sup>59</sup> With particular reference to Gear 2020; Petersmann 2021.