

# **The Imperative of Ecological Integrity: Conceptualising a Fundamental Legal Norm for a New “World system” in the Anthropocene**

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## **Abstract**

The Anthropocene entails great challenges and uncertainties, but will possibly prompt a reconfiguration of values in relation to the current status quo. Fundamentally, protection of ecological integrity will guide governance systems of successful communities; failure to do so will be a counter survival tactic. This chapter examines possibilities to jurisprudentially conceptualise ecological integrity as a fundamental norm, or *grundnorm*, to function as a “universal acid” affecting all areas of law and governance, beyond traditional environmental tools and policies. In the Anthropocene, the Earth appears as a single system with socio-economic systems and ecological systems jointly determining its dynamics. To stay within planetary boundaries, humanity’s socio-economic systems need to be governed in a way that preserves the integrity of ecological systems.

## **1. Introduction**

This chapter aims to show the importance of ecological integrity as an objective or fundamental norm of law and governance for the Anthropocene. While effective environmental law will be a key part of staying within planetary boundaries, all areas of law are affected by the imagery of the Anthropocene, including commercial law, taxation regimes, constitutions, and traditional legal concepts such as property, human rights and state sovereignty.

In the Anthropocene, it is time for the message of environmental law to become clear and urgent: the opposite of strong sustainability and ecological integrity is collapse.<sup>1</sup> Moreover, true, strong sustainability, has radical implications for the West, implying social organization at a far lower level of complexity and consumption. The chapter therefore starts with the simple thesis that if ecological integrity does not become accepted as a fundamental norm of the legal system in the Anthropocene, the default choice is collapse.<sup>2</sup> But how can ecological integrity as a fundamental norm be conceptualized and what does it entail in concrete terms? If such a norm is not adopted, what does collapse mean in concrete terms? These questions are becoming increasingly pressing in the Anthropocene, and are worth exploring here.

## **2. Jurisprudential Conceptualisations of Ecological Integrity**

As a central hypothesis, it is suggested that ecological integrity must attain the same

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<sup>1</sup> This dichotomy is explicitly expressed in works such as, Costanza, Graumlich and Steffen (eds) *Sustainability or Collapse? An Integrated History and Future of People on Earth* (MIT Press, Cambridge, 2007).

<sup>2</sup> The term “ecological integrity” is used in conjunction with “sustainability,” due to the over use and watering down of the latter term. On the definition of “strong sustainability”, see Klaus Bosselmann, *The Principle of Sustainability* (Ashgate, Aldershot, 2008).

fundamental normative status in law as human rights, the abolition of slavery, the rights of women and the rule of law. Jurisprudentially, can ecological integrity be conceptualised as a *grundnorm*, or “fundamental norm”?<sup>3</sup> After a consideration of Kelsen, Kant and Alexy, it is explained that a traditional Natural Law approach provides the most robust foundation from which the normative bindingness of ecological integrity could be asserted.

## 2.1. Grundnorm theories

### 2.1.1. Kelsen

Kelsen's *Pure Theory of Law* is the jurisprudential position with which the term *grundnorm* (or “basic norm”) is commonly associated. In Kelsen's theory, the status and meaning of *grundnorm* is not a conceptually simple matter.<sup>4</sup> The key point about Kelsen's position is that the basic norm has no ethical or political function; it only has an epistemological function.<sup>5</sup> For Kelsen, who emphasized the separation of law and morality, the normativity of “ecological integrity” (in the sense of *you should act in accordance with ecological integrity*) can be understood as a *moral* basic norm (there can be a variety of basic norms in a system of moral norms), and not as a *legal* *grundnorm*. There can only be one legal *grundnorm* that provides unity to the legal system. The basic norm of a legal system addresses the question of legal validity in terms of authorization, and is not a question of content.<sup>6</sup> Kelsen observes that a constitution may contain substantive limits to law making, but for Kelsen, a constitution *itself* is not a *grundnorm*.<sup>7</sup> The *grundnorm* is a hypothetical construct about a constitution, functioning to give an order of legal norms validity.

A *grundnorm* can provide a foundation for the legal bindingness of ecological integrity, provided proper constitutional processes are followed. Or, a *grundnorm* may change.<sup>8</sup> For example, there may be a revolution as a result of which an older

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<sup>3</sup> See, for example, Klaus Bosselmann, “A Normative Approach to Environmental Governance: Sustainability at the apex of environmental law”, in: Fisher, D. (ed.), *Research Handbook on Fundamental Concepts of Environmental Law* (Edward Elgar Publ., 2016), 30-70; Peter Bridgewater, Rakhyun Kim and Klaus Bosselmann “Ecological Integrity – A Relevant Concept for Environmental Law in the Anthropocene?”, *Yearbook of International Environmental Law*, Vol.25, No.1 (2016), 61-78; Klaus Bosselmann “The Rule of Law in the Anthropocene”, in: Martin, Paul et al. (eds), *In Search of Environmental Justice*, (Edward Elgar Publ., 2015), 44-61; Klaus Bosselmann, “The Rule of Law Grounded in the Earth: Ecological integrity as a Grundnorm”, in: Westra, L. and Vilela, M. (eds.), *The Earth Charter, Ecological Integrity and Social Movements*, (Routledge 2014), 3-11.

<sup>4</sup> Douglas Fisher, in *Legal Reasoning in Environmental Law* (Edward Elgar, Cheltenham, 2013), for example, seems to use the term ‘*grundnorm*’ in different senses. It appears he is building on Kelsen (who is cited). It is stated that: “An example of a *grundnorm* is a constitution” (p 7), and later that a “Constitution may include a range of *grundnorms*.” Also, it is later noted that “Sustainability, represents a principle of justice fundamental to civilized nations, similarly to the principles of freedom and equality. In this way, sustainability emerges as a fundamental principle or *grundnorm* of the system” (p 59). Thus “*grundnorm*” can be conceptualized in Kelsen's narrow sense, or in the broader sense of an ‘important norm’. The following attempts to further refine this discussion conceptually.

<sup>5</sup> Hans Kelsen *Pure Theory of Law* (UCLA Press, Berkeley, 1967; translated by Max Knight) 218.

<sup>6</sup> Kelsen, 217.

<sup>7</sup> Kelsen, 223.

<sup>8</sup> See, JW Harris, “When and why does the Grundnorm Change?” (1971) 29(1) *Cambridge Law Journal* 103.

constitution is displaced, and a new “sustainable constitution” put in place by revolutionary forces (with substantive limits to law making in terms of ecological integrity). If the new constitution becomes efficacious to the requisite degree, the new *grundnorm* of society would then be: “the sustainable constitution is to be obeyed.” However, environmental law can find more robust normative reasoning in other jurisprudential concepts. In Kelsen’s terms, “ecological integrity” cannot be a (legal) *grundnorm*.

### 2.1.2. Kant

Kant formulated the idea of a ‘basic norm’ (though he did not use this specific term) as a source of the validity of positive law in his 1797 work, *The Metaphysics of Morals* (commencing with a treatise on the philosophy of law).<sup>9</sup> In contrast to Kelsen, who thinks that the basic norm is simply an epistemological premise, for Kant the basic norm is a Natural Law, recognized by means of reason. For Kant, a legal system can consist entirely of positive law, but must be “preceded by a natural law that establishe[s] the legislator’s authority...to bind others simply by his arbitrary action.”<sup>10</sup>

In contrast to classical natural law, which looks to the content of positive law in terms of reason and justice, in Kant’s attenuated version of natural law – the natural law basic norm – reason *dictates* that people leave a state of nature and move into a civil or legal state of affairs, “subjecting oneself to a publicly lawful, external coercion.”<sup>11</sup> Most relevant (from the point of our enquiry) is that it is problematic to assert that respect for ecological integrity could somehow be included (as a “dictate of reason”) in Kant’s natural law basic norm. This is because substantial content, such as natural rights, are not secured – it is exclusively oriented to legal certainty and peace.<sup>12</sup> Moreover, Kant excludes any right to resist unjust laws, asserting that the moral requirement of obedience to positive law is “absolute.”<sup>13</sup> While doubts have been raised about the coherence of Kant’s legal theory,<sup>14</sup> the fundamental importance of ecological integrity can, perhaps, be conceptualized more fully in traditional natural law terms.

### 2.1.3. Alexy

Alexy argues for the need to redefine the legal “*grundnorm*” to include “content”.<sup>15</sup> He reinterprets Kelsen’s basic norm as making a claim to substantive justice with respect to the content of the laws it purports to authorize. The basic norm “may include moral elements that take the argument of injustice into consideration. ... [the

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<sup>9</sup> Uta Bindreiter *Why Grundnorm? A Treatise on the Implications of Kelsen’s Doctrine* (Kluwer, The Hague, 2002) 15.

<sup>10</sup> Robert Alexy *The Argument from Injustice* (Clarendon Press, Oxford, 2002; trans S.L. Paulson and B.L. Paulson) 116 fn 202, citing Kant *Metaphysical Elements of Justice* (part 1 of *Metaphysics of Morals*).

<sup>11</sup> Alexy, 118 fn 206, citing Kant, *Metaphysical Elements of Justice*.

<sup>12</sup> *Ibid*, 118.

<sup>13</sup> Kant: *Political Writings* (Hans Reiss ed & HB Nisbet trans, 2<sup>nd</sup> ed, 1991) 81 cited by Jeremy Waldron “Kant’s Legal Positivism” (1996) 109(7) *Harvard Law Review* 1535 fn 34.

<sup>14</sup> Alexy, 120

<sup>15</sup> Lars Vinx *Hans Kelsen’s Pure Theory of Law: Legacy and Legitimacy* (OUP, Oxford, 2007) at 58 cites Robert Alexy, *Begriff und Geltung des Rechts* (Freiburg, 1994), 154-97 (English translation: *The Argument from Injustice*).

basic norm] needs grounding.”<sup>16</sup> One critique of a grundnorm with content is that an approach such as Alexy’s could lead to a muddling of concepts. Vinx argues that Kelsen’s emphasis on the positivity of law should be maintained. Rather than deriving from a crude moral relativism (of which critics have accused Kelsen), Vinx cites a deeper motivation for Kelsen’s ‘separation’ thesis. The ‘normativity’ we can attribute to a ‘legally valid’ norm, is different from assessments of substantive justice of its content. This is a unique type of legal normativity Vinx calls ‘legal legitimacy’.<sup>17</sup> While Vinx’s ideas about ‘legal legitimacy’ are not directly relevant for present purposes, the point about maintaining conceptual clarity is valid. The addition of substantive content (though minimal, such as a Radbruch type rule about injustice) brings us away from Kelsen and closer to traditional concepts of natural law.

## 2.2. Fundamental norm of natural law

Writing in 1994 of New Zealand’s newly introduced Resource Management Act 1991, Harris commented “the statute has started the environmental rule-maker and decision-maker on the only path into the future that can be taken by a rational human community.”<sup>18</sup> Without specifically making reference to the jurisprudential tradition of “natural law,” a connection was made between the use of reason and the provision of legal protection to safeguard the environment, which sustains the existence of the community.

Finnis provides a contemporary account of natural law. He explains, “the principal concern of a theory of natural law is to explore the requirements of practical reasonableness in relation to the good of human beings...”.<sup>19</sup> He lists seven “basic goods”, as equally important components of human flourishing - life, knowledge, play, aesthetic experience, sociability (friendship), practical reasonableness and ‘religion’.<sup>20</sup> Protection of the life supporting capacity of the natural environment most obviously relates to the first ‘good’ on the list, i.e. “life”. Finnis observes that all societies in some sense are concerned with “life” (in the sense of survival). Thus, the argument for the fundamental importance of ecological integrity in natural law terms is fairly straightforward - it is reasonable that humanity not destroy itself.

Practical reasonableness refers to “bringing intelligence to bear on problems, choosing one’s actions”.<sup>21</sup> One of the nine requirements of practical reasonableness is that the good of one’s community be advanced. One’s view of what reason and natural law requires will vary, depending on who one’s ‘community’ is perceived to be, and the time horizon within which the good of one’s community is viewed. The *Earth Charter’s* emphasis on respect for the “community of life” is perhaps one of the broadest, non-anthropocentric articulations of community<sup>22</sup>. If one takes a *long term*

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<sup>16</sup> Alexy, 147.

<sup>17</sup> Vinx, 58-59.

<sup>18</sup> BV Harris “Sustainable Management as an Express Purpose of Environmental Legislation: The New Zealand Attempt” (1993) 8 *Otago Law Review* 51.

<sup>19</sup> John Finnis *Natural Law and Natural Rights* (2<sup>nd</sup> ed, OUP, Oxford, 2011) 351.

<sup>20</sup> *Ibid.*, 86.

<sup>21</sup> *Ibid.*, 87.

<sup>22</sup> Klaus Bosselmann and Ron Engel, “Introduction”, in Klaus Bosselmann and Ron Engel (eds.), *The Earth Charter: A framework for global governance*, (KIT Publ., Amsterdam, 2010), 10-15.

view of the good of one's community, due to the borderless nature of many environmental challenges, it becomes apparent that laws which facilitate breaches of the limits of global ecological integrity do indeed put the good of one's community at risk. As such, these laws may ultimately be assessed as contrary to reason (and thus contrary to natural law).

Classical natural law holds that positive law can be derived from natural law by deduction or determination (*determinatio*). Though the importance of ecological integrity has not been explicitly at the fore of the natural law tradition in the law of nations throughout history, it can arguably be arrived at through rational deduction. Alternatively, through determination, reason ascertains law as being appropriate for its historical context. In doing so, the congruence of positive law with reason will be within a specific range of parameters. In our present era, with the global ecological crisis so vividly explicated by the Anthropocene, laws that violate ecological integrity are unlikely to be within the reasonable range of determination, and can therefore said to be in tension with natural law.

In light of the discussion above, it becomes apparent that the terms *grundnorm* and basic norm, owing to their association with Kelsen, are probably best left conceptually unmodified.<sup>23</sup> Rather than saying that ecological integrity must become a *grundnorm* (though in a sense distinct from Kelsen), a different term may better promote conceptual clarity. "Grounding norm," or "foundational norm" are possibilities in English. However, it is suggested that ecological integrity is best termed (in English) a "fundamental norm" of natural law. On "norms" of natural law, discernable by reason and universally applicable, Finnis explains:

Any sound theory or philosophy of law will need to attend to two broad kinds of principle, norm and standard: those applicable by persons of practical reasonableness only because of they are standards chosen or otherwise factually established by past choices of their community, and those that are applicable whether or not so chosen or ratified. [T]he latter ... has been decisive for our vocabulary, making its way through Aristotle, the Stoics, Cicero, St Paul, Gaius and Aquinas and their successors down to the United Nations Charter and today.<sup>24</sup>

### 2.3. A fundamental norm in international law

It has been observed that in some form or another, "global sustainability must become a foundation of society. It can and must be part of the bedrock of nation states."<sup>25</sup> If ecological integrity is properly understood as a fundamental norm of

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<sup>23</sup> Bindreiter, 44: " 'aus dem Grund' (in German), a phrase rooted in the idea of a firm point of departure (a basis). Grund changed meaning. Beginning 16<sup>th</sup> century *grund* (meaning foundation) was used in the sense of "essential or necessary assumption". In the field of philosophy, *grund* stood for "ultimate principle" and was used in this sense by Kant. However, *grund* (foundation) changed meaning in the causal direction too. A grund, that to which a thing was owing its existence. (to found, create; give reasons for something)...Grund stood for "ultimate principle" and was used in this sense by Kant. However, Grund (*foundational*), changed meaning in the causal direction: a grund was that to which a thing was owing its existence."

<sup>24</sup> John Finnis, "What is the philosophy of Law?" (2012) 1 *Rivista di Filosofia del Diritto* 67.

<sup>25</sup> Sanford E Gaines "Reimagining Environmental Law for the 21<sup>st</sup> Century" (2014) 44 *Environmental Law Reporter* 10188 at 10213.

natural law as was argued above, in international law it should (eventually) emerge as a peremptory norm, or *jus cogens*. The Draft Convention on State Responsibility, Art 19(3), ILC, proposed that breach of sustainable resource management qualify as a “crime by a state” toward the international community. That is, “sustainable resource management” was proposed to be defined as a peremptory norm, whose infringement would constitute a “serious breach of an international obligation of essential importance”. This *jus cogens* proposal was, unsurprisingly, rejected by a considerable number of states.<sup>26</sup> However, in the Anthropocene it is possible to imagine the recognition by the community of nations of the deep ethical and legal significance of ecological integrity (and strong sustainability). Attaining such status, a “breach” may come to be seen as worthy of moral and legal condemnation, perhaps as much so as current peremptory norms of genocide, torture, the execution of juvenile offenders and slavery.

Take slavery as a point of comparison. Slavery was defined in Roman law as “an institution according to the law of nations whereby one person falls under the property rights of another, contrary to nature.”<sup>27</sup> Though slavery was legal in Rome, attempts to justify it starting with Aristotle, generally focused on supposedly inferior qualities of some ethnic group, rather than the institution itself (which was known to be unjustifiable in terms of natural law).<sup>28</sup> It may come to be seen that living in violation of ecological integrity, too, becomes broadly understood as ‘contrary to nature’ in two senses: contrary to the physical “laws of nature” and contrary to natural law as determined by reason. Ophuls, in *Plato’s Revenge*, uses a reinterpretation of natural law, looking to the physical ‘laws of nature’ to provide legal constraints.<sup>29</sup> Finnis, on the other hand, contrasts ‘laws of nature’ (as in the laws of the sciences) and “natural law.”<sup>30</sup>

#### 2.4. Recognition through ecological thinking and jurisprudence

Dennis Meadows points out that “the world is a complex, interconnected, finite, ecological-social-psychological-economic system.”<sup>31</sup> In light of such a holistic perspective, Gaines rightly emphasizes the importance of an interdisciplinary approach to environmental legal research. It is here proposed that a holistic approach would see environmental lawyers reconceptualise their starting point as ‘sustainability thinkers’. Rather than a specialist, niche discipline, thinking must go beyond a narrow approach of considering systems of ‘natural resources’ (and their

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<sup>26</sup> Peter Orebech, *The Role of Customary Law in Sustainable Development* (CUP, Cambridge, 2005) 389.

<sup>27</sup> Florentius in Justinian’s Institutes (1.5.4.1).

<sup>28</sup> David Graeber *Debt: The First 5,000 Years* (Melville House, New York, 2011), ch 7 fn 2.

<sup>29</sup> William Ophuls *Plato’s Revenge: Politics in the Age of Ecology* (MIT Press, 2011).

<sup>30</sup> Finnis *Natural Law and Natural Rights*.

<sup>31</sup> Gaines at 10205. Such a holistic definition of the “world” as a system is more useful for sustainability thinking than merely a focus on the “earth” and its systems (in the sense of biophysical processes). As an illustrative aside, the continuing dominance of Cartesian dualism can be seen in comments by the “busy lawyer”, who fondly mentions his well-meaning but hopelessly utopian environmental law colleagues attending conferences, “off to save the earth”. No matter of concern to him, though, as if the “busy lawyer”, the rational subject, can continue to exist independently of the earth. A Cartesian mentality persists, even though Heidegger provided a thorough critique of the “rational subject” and put forward his own more holistic concept of the human being as a “Being-in-the-world.” See Martin Heidegger *Being and Time* (Basil Blackwell, Oxford, 1962; Trans John Macquarrie; original 1927) 78.

ecological integrity or lack thereof).<sup>32</sup> The challenge of “sustainability thinking” is to take on the ‘world’ (as defined below) in all its complexity.

As a point of departure, it is important to recognize that jurisprudential characterisations of ecological integrity can only do so much. In achieving ecological integrity, changing consciousness is still the bottom line. Indeed, emphasizing the need for a community ‘ethos’ of sustainability, Gaines has said that “[t]he world does not need new ideas or new principles.”<sup>33</sup> Rather, he stresses the importance of education in fostering a ‘sufficiently enlightened society,’ and particularly the need for ‘ecological awareness.’<sup>34</sup> While this is true, perhaps it is necessary to go further than ecology. As noted above, environmental law could usefully engage with more holistic thinking and an interdisciplinary approach. As such, an approach to raising public awareness would constructively approach ecological challenges holistically. Part of doing so would include conveying the interrelated nature of energy, economic and environmental challenges.<sup>35</sup> Lack of political will or community ethos is surely at least in part due to lack of awareness (particularly in relation to energy). So an understanding of these interrelated issues is arguably necessary before there can be any political will to achieve comprehensive solutions through law. Though there may be other practical obstacles, it is conceivable that a largely aware public will at least be ready to think about taking steps appropriate to a rational human community.

At this point it is worth pausing to consider the current prospects for the actual recognition, acceptance and implementation collectively by states of ecological integrity as a norm of fundamental importance. Doing so, states would be able to comprehensively and sustainably reshape all areas of law and policy. This is the preferable way to deal with the Anthropocene’s global socio-ecological crisis. However, as will become apparent, there is a growing sense of frustration with the limitations of the state-centric system. Nevertheless, global governance to maintain global ecological integrity is an objective for which environmental law scholarship must continue to argue strenuously. At the same time, in the Anthropocene, it appears to be time to start considering the implications and challenges for law and governance of the possibility that states will opt to continue with ‘business as usual’ practices.

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<sup>32</sup> This is not a blanket condemnation of the whole discipline, which has done much creative work probing the philosophical foundations of the environmental crisis. Rather, it is a call to make holistic “sustainability thinking” a more explicit ethos of the discipline.

<sup>33</sup> Gaines, 10211.

<sup>34</sup> Gaines, 10204.

<sup>35</sup> An example of a resource which provides an accessible introduction to such an integrated perspective is Chris Martenson *The Crash Course: The Unsustainable Future of our Economy, Energy and Environment* (John Wiley & Sons, Inc., Hoboken, New Jersey, 2011). Rees (discussed below) expresses hope that the internet might enable a cascade of data to give rise to a “global consciousness” of the importance of ecological integrity. “Data” in the form of short, attractive videos (some of which may ‘go viral’, with millions of viewers) is one avenue which environmental law could productively explore in “educating the public”. The basic components of the problem of environmental law are conveyed in Chris Martenson’s series of videos, “The Crash Course” widely available online. As another example, a video lecture of Dr Albert Bartlett, provocatively titled “The Most Important Video You’ll Ever See” (and conveying the substance of his article *Arithmetic, Population and Energy*) has at time of writing over 5 million “hits”. He memorably says: “the greatest shortcoming of the human race is our inability to understand the exponential function”. A grasp of the exponential function is surely essential in considering the relationship between ecological integrity and economic growth.

One alternative to a business as usual approach which could instill ecological integrity as a foundational norm, is ecological economics; an economic model which effectively works out the implications of a fundamental norm of ecological integrity for economic activity within truly sustainable limits.<sup>36</sup> After an elegant explanation of ecological economics, contrasting it with the current dominant model of economic growth Rees observes: “[t]here is, of course, almost no possibility that the global community will opt voluntarily for anything like the sustainable steady-state-with-equity described above.”<sup>37</sup> What prompts such pessimism? Rees takes history as a guide, though holding out hope that this time it is different.<sup>38</sup> He offers a glimmer of hope, pointing to modern communication technology and the power of the Internet, which may yet enable a cascade of data, giving rise to global consciousness around the modern global ecological predicament. At a critical tipping point, public opinion may force effective political responses within nations and international agencies.<sup>39</sup>

Similarly, Engel notes “no previous complex human society of significant size has ever achieved sustainability”.<sup>40</sup> The literature on reasons for past societal collapse is ample, including interesting developments in complexity theory.<sup>41</sup> As Engel points out, one key difference is that, in contrast to previous localized collapses, the stakes are so much higher when trying to secure *global* ecological integrity. Gaines, discussing the complexity and scale of environmental challenges, observes that global conservation efforts “will require drastic changes in current behaviors of most of the world’s [nearly 7,5] billion people, but also mean that decisions about the coordination of those efforts will require international cooperation of a scope and intensity that has no precedent in human history. [and that] Such cooperation is conceivable...”<sup>42</sup> Legal analysis, then, cannot assume that the required cooperation between all sectors of society including governments is assured. Indeed, some sustainability thinkers have shifted emphasis in their calls for action. In 1972, with the original *Limits to Growth*, Dennis Meadows and his team called for changes to modes of activity that respected planetary limits. He now believes it is too late to achieve “sustainable development,” and rather calls for raising resilience of systems to attempt to mitigate the worst effects of collapses in resources and energy availability.<sup>43</sup>

In sum, in the Anthropocene, various forms of “collapse” (the antithesis of sustainability, as it were) are challenges which communities, nations and regions will possibly have to face. Given the more than *de minimis* likelihood of such events, it is worth at least considering the possible implications for law and governance. As such,

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<sup>36</sup> Herman Daly *Beyond Growth* (Beacon Press, 1996).

<sup>37</sup> William E Rees “Confronting collapse: Human cognition and the challenge for economics” in Westra, Taylor and Michelot (eds) *Confronting Economic and Ecological Collapse* (Routledge, Abingdon, 2013), 310.

<sup>38</sup> Rees, 310.

<sup>39</sup> *Ibid.*, 311. “... *If history is any guide, rather than adopt a steady-state strategy, the world community is likely to further entrench the growth-bound, competitive, every-nation-for-itself status quo.*”

<sup>40</sup> J Ronald Engel “Beyond collapse: claiming the holistic integrity of planet Earth: in in Westra, Taylor and Michelot (eds) *Confronting Economic and Ecological Collapse* (Routledge, Abingdon, 2013), 240

<sup>41</sup> See, generally, Joseph Tainter *The Collapse of Complex Societies* (CUP, Cambridge, 1990); Jared Diamond *Collapse: How Societies Choose to Fail or Succeed* (Penguin, New York, 2005). Interesting work on Complexity Theory is also being done by Prof Geoffrey West. See, “Cities, Scaling and Sustainability” <[www.santafe.edu](http://www.santafe.edu)>.

<sup>42</sup> Gaines, 10201.

<sup>43</sup> Dennis Meadows, Speech to Smithsonian Institution Washington, DC (February 29, 2012).

the implications of the fundamental norm of ecological integrity will be considered below from two different angles: firstly, the implications of ecological integrity as part of pre-collapse reform efforts through the conventional state-centric approach; and secondly, the possible role such a fundamental norm could play in law and governance of communities ignoring the limits to growth and experienced some form of collapse.

Before exploring what ecological integrity as a fundamental norm entails in concrete terms, a metaphor may prove useful. The idea of “universal acid” provides a memorable metaphor from which a range of issues can be viewed. Writing about the impact of the ideas of Charles Darwin, as formulated in *On the Origin of Species by Natural Selection* (1859), psychologist Daniel Dennett comments:

Did you ever hear of a universal acid? This fantasy used to amuse me and some of my schoolboy friends... Universal acid is a liquid so corrosive it will eat through anything. The problem is: what do you keep it in? It dissolves glass bottles and stainless-steel canisters as readily as paper bags. What would happen if you somehow came upon or created a dollop of universal acid? Would the whole planet eventually be destroyed? What would it leave in its wake? After everything had been transformed by its encounter with universal acid, what would the world look like? Little did I realize that in a few years I would encounter an idea – Darwin’s idea – bearing an unmistakable likeness to universal acid: it eats through just about every traditional concept, and leaves in its wake a revolutionized world-view, with most of the old landmarks still recognizable, but transformed in fundamental ways.<sup>44</sup>

The acceptance of ecological integrity as a fundamental norm will need to have the impact of a “universal acid”. As Steffan Westerlund has argued, sustainability must take the entire legal system into account: “each and every legal principle has to be reassessed from this perspective”.<sup>45</sup> While this is correct, a universal acid cannot be contained within the legal system alone. The Anthropocene, as a time of instability and disruption, also provides the opportunity to fundamentally reevaluate broader norms of the status quo.

### 3. Analysing the ‘World-System’

The following discussion is an attempt to clarify the *problem* of ecological integrity. How might we get ecological thinking more firmly embedded in social and economic systems? How might ecological integrity function as a fundamental norm?<sup>46</sup> What are the powerful interests and barriers arranged against a fundamental norm of ecological integrity which might impede its effective realization in law?<sup>47</sup> Attempting to consider such questions, this section builds on Meadows’ holistic definition of the world as a ‘complex, interconnected, finite, ecological-social-psychological-economic system.’ It will consider the world in the Anthropocene as a

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<sup>44</sup> Daniel Dennett, *Darwin’s Dangerous Idea* (Touchstone, New York, 1996) 63.

<sup>45</sup> Gaines, 10192.

<sup>46</sup> Ibid.

<sup>47</sup> Lee Godden “Book Review: The Principle of Sustainability” (2009)47(4) *Osgoode Hall Law Journal* 807.

complex “ecological-energy-financial-commercial-political-social system”.<sup>48</sup> Each component can be viewed in terms of the sustainability-collapse dichotomy, while the concept of integrity will be used as a universal acid, as described above. Because we are considering the Anthropocene, it is worth taking a look at the bigger picture. Doing so provides the opportunity to critically assess the integrity of each aspect, and to reimagine possibilities in terms of a different ethic or ethos. Such *lex ferenda* ideas may be perceived by the status quo as radical and implausible. Nevertheless, in the twilight of idols, one must philosophize with a hammer.<sup>49</sup>

The rationale for the following holistic approach is the notion that ecological integrity is partly a reflection of the integrity of societies inhabiting the ecological space. With a healthy, vibrant society, it is suspected that chances are higher we will see healthy vibrant nature. On the other hand, with a society lacking in integrity, loss of ecological integrity is not surprising. Can we expect to achieve ecological integrity if we have a financial system and financial culture that lacks integrity? And, what is commercial integrity? What might implications for ecological integrity be of a commercial system involving personal economic relations of trust and mutual aid, in contrast to a depersonalized system emphasizing self-interest (as expressed in classic economics)? Moreover, to what extent do practical difficulties arise in achieving global *ecological* integrity without global *political* integrity? Finally, how important is the social integrity of a community in the Anthropocene (and its social resilience, as an aspect of integrity)? As Rockstrom, Steffen and colleagues observe, how well a community might manage in the face of environmental shocks of the Anthropocene will be determined by its social-ecological resilience.<sup>50</sup>

The aim here is to explore the interrelationships of systems at the conceptual level. In doing so, it is useful to keep the terms integrity and collapse, but leave them open to their various resonances. Integrity thus signifies wholeness, soundness, completeness, resilience, health and naturalness. Ecological integrity is a scientifically measurable aspect of the overarching concept of strong sustainability. It is a useful term, because it provides not only the scientifically measurable aspect of ecological systems, but also moral resonances, such as something or someone one can rely on, and the idea of honesty, for example Collapse, in contrast, is considered the opposite of ecological integrity and strong sustainability. “Collapse” is defined by Joseph Tainter as a significant, relatively quick reduction in complexity.<sup>51</sup> It is a loss of integrity beyond a system’s threshold of resilience from which it can recover. Collapse has occurred when integrity has eroded beyond a certain (often unhealthy) extent.

Collapse is not always necessarily a bad thing. It depends on what it is that collapses, and where one is situated in relation to the collapse. For example, a collapse in house prices, while bad for property investors, may not be a bad thing for a young couple wishing to buy a house to live in. However, the worst effects of some collapses are worth considering and trying to avert. For example, the collapse of

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<sup>48</sup> A framework adapted from Dimitry Orlov *The Five Stages of Collapse* (New Society Publishers, Canada, 2013).

<sup>49</sup> Friedrich Nietzsche *Twilight of the Idols, or, How to Philosophize with a Hammer* (1889).

<sup>50</sup> J Rockstrom et al “Planetary Boundaries: Exploring the Safe Operating Space for Humanity” (2009) 14(2) *Ecology and Society* 32..

<sup>51</sup> Joseph Tainter *The Collapse of Complex Societies* (CUP, Cambridge, 1990), 4.

safety systems in a nuclear power-plant would be important to avoid. So, too, would a collapse in the resilience of planetary life supporting systems.

“Collapse” in the everyday sense has connotations of rapidity. A house of cards collapses quickly, as does a building. However, many collapses of systems, in relation to an individual human lifetime, are “slow collapses”. Thus, the collapse of an empire can take many centuries. It is worth recognizing that collapse has often been part of the flow of history. Sometimes it has been judiciously avoided. However, often collapses of systems have proven difficult to manage. It is worth considering why, and the implications for ecological integrity.

The following analysis looks at various spheres of social organization such as responses to environmental change, energy supply, financial organization, commercial transactions and the political system. For each sphere, we will consider the current *status quo*, which leads to the default position in the absence of a norm of integrity: collapse. The possibilities for reform of law and governance pre-collapse will then be explored. That is, what might enhanced integrity in this aspect of the world-system look like? Finally, consideration will be given to the implications for law and governance in a post-collapse scenario. This is no utopian (or dystopian) blueprint, merely an attempt to prompt a holistic conversation and think in a concrete way what ecological integrity might entail.

### 3.1. Ecological Integrity

The 20<sup>th</sup> century saw exponential increases in fossil fuel use (especially oil), global population and levels of debt (money loaned into existence by banks). These three exponentials are surely interrelated. A plausible interpretation is that energy was driving economic growth, with the larger economy sustaining a larger population and increase in debt (based on future hopes for growth).<sup>52</sup> Growth in human population, energy use and economic consumption has put increasing stress on ecosystems, as has been well documented.<sup>53</sup>

No disaster or accident is required in order for environmental collapse to unfold - just more business as usual practices. Meadows holds that the actual form of any environmental collapse will be too complex for any model to predict. “Collapse will not be driven by a single, identifiable cause simultaneously acting in all countries,” he observes; “[i]t will come through a self-reinforcing complex of issues”—including climate change, resource constraints and socioeconomic inequality.<sup>54</sup>

The planetary boundary framework has suggested “the need for novel and adaptive governance approaches at global, regional, and local scales.”<sup>55</sup> An institution for trusteeship of the global commons is one example for global governance.<sup>56</sup> A novel framework for national governance has been proposed by Woolley.<sup>57</sup> As Gaines has

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<sup>52</sup> Orlov, 27.

<sup>53</sup> See, Richard Heinberg *Peak Everything: Waking up to the Century of Declines* (New Society Publishers, Canada, 2007).

<sup>54</sup> M Mukerjee “Apocalypse Soon: Has Civilization Passed the Environmental Point of No Return?” (23 May 2012) <scientificamerican.com>.

<sup>55</sup> Rockstrom et al.

<sup>56</sup> See, Klaus Bosselmann *Earth Governance* (Edward Elgar, 2015)

<sup>57</sup> See, Olivia Woolley *Ecological Governance: Reappraising Law’s Role in Protecting Ecosystem Functionality* (CUP, Cambridge,

observed, “the ideas are there”. Or, as the Millennium Ecosystem Assessment concluded: “[t]he warning signs are there for all to see. The future lies in our hands.”<sup>58</sup> It is now a question of whether societies and governments are able to undertake the required changes quickly enough.

One governance issue in the Anthropocene is that of ‘climate refugees’, and other displaced populations due to changes in habitat. Shifts in large numbers of populations will present challenges. For example, New Zealand (currently with a population of around 4 million people) might choose to implement a comprehensive transition to a steady-state economy based on a stable population and calculated standard of living.<sup>59</sup> Under pressure to receive climate refugees, will New Zealand take them all, or refuse to compromise its plans for ecological integrity. New Zealand will probably have to absorb some refugees from island nations like Kiribati (or Palau), which are in the process of becoming ocean shoal nations. But consider nations irrigated by rivers that are fed by rapidly disappearing glaciers, like Vietnam, Laos, Cambodia, Thailand, Pakistan and Bangladesh. Due to climate change, it is conceivable that these nations might experience decades of floods as the glaciers rapidly melt, followed by the challenges of drought. In such circumstances, the territories of these nations may only support a far smaller population than at present, creating a substantial refugee crisis. It has been proposed that ecological integrity be recognized as a fundamental norm. However, it is unlikely that ecological integrity will prevail in such pressing circumstances, and unlikely that it should ethically. It is a norm which will have to be balanced against other norms, such as human rights.

Though seemingly distant, global ecological collapse is no longer an impossibility in the Anthropocene. The process may take many more centuries. Or, multiple planetary thresholds may be crossed relatively quickly, resulting in more rapid ecological decline; the data is not yet clear.<sup>60</sup> The requisite extent of ecological collapse to be termed “global” would have to be extensive (though not necessarily complete). It is always possible to imagine various scenarios, ultimately at the end of which we are left without a home, having rendered Earth uninhabitable. But such a scenario is avoidable, while it is worth remembering that ultimately, the opposite of global ecological integrity and sustainability is global ecological collapse which must be avoided at all cost.

### **3.2. Energy Integrity**

The twentieth century has been an age of energy abundance (especially for the developed world). Anthropogenic climate change has been one consequence. In the Anthropocene, in addition to dealing with challenges of human impacts on the atmosphere and ecological systems, the era is likely to be characterized by increasing energy scarcity. This is due to a depletion of fossil fuels (particularly those with high ‘net energy’, understood as the energy returned on energy invested in extraction). Historically, economic activity has boomed when concentrated, easily produced sources of energy were discovered. The progression went from wood to

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<sup>58</sup> Millennium Ecosystem Assessment *Living Beyond Our Means* (2006).

<sup>59</sup> As envisioned in Jane Adams et al *Strong sustainability for New Zealand: Principles and Scenarios* (Nakedize, 2009).

<sup>60</sup> See Rockstrom, above.

coal, to oil and gas, and in some cases nuclear energy. Now, most of the easy, cheap, plentiful reservoirs of these fossil fuels have been depleted; what remains are those resources that are the difficult, risky and expensive to extract.<sup>61</sup> Of particular relevance here is the issue of “peak oil,” which has been explained by a number of authors.<sup>62</sup>

Locally, a significant decline in a country’s access to energy, such that the term “energy collapse” of energy availability is appropriate, would have significant impacts on economic activity. Lower quality sources of coal may also be turned to by nations experiencing energy scarcity, which will entail further adverse effects for climate change. Reduction in availability of conventional oil has already prompted a use of unconventional oil, such as tar sands (which has extensive adverse effects on ecological integrity). Globally, an overall reduction in availability of quality sources of fossil fuels has the potential to lead to geopolitical tensions. (Nations with oil have been contested spaces in the best of times).

Some countries such as Russia, still have high levels of energy integrity and resilience. Others, which are totally dependent on energy imports, have much lower levels of resilience. Efforts to increase energy resilience, for example, through intensive investment in renewable technologies, are being pursued with differing levels of urgency. The challenge for nations will be to enable a relatively smooth transition from high fossil fuel dependence to economic activity with cleaner, less centralized and more resilient energy systems.

A permanent decrease in access to high levels of fossil fuel energy will mean that economies will have to reconfigure into a more local, simpler mode of economic activity. This will have a monumental impact on systems of food production, transportation and trade, among others. It will also have implications for what we envision as suitable levels of governance.

### 3.3. Financial Integrity

What is the relationship between current financial arrangements and ecological integrity? Most financial systems and the cultures they are based on are short term-ist and they often lack integrity. However, here we attempt to go beyond issues such as irresponsible behavior in investments (which is the proper target of regulation), to a consideration of the very fabric of the financial system itself. Max Weber said that essence of capitalism was never to settle down, but to engage in endless expansion. This is at least in part because of the nature of money. Global finance is based on fiat currencies loaned into existence by banks at interest.<sup>63</sup> The universally revered “magic of compound interest” results in exponential growth.<sup>64</sup> As a mathematical function, this can be characterized as debt raised to the power of time.<sup>65</sup> With a positive interest rate, as time passes, the debt needs to grow faster. Unfortunately, exponential growth eventually outpaces every physical process, resulting in collapse.<sup>66</sup> Interest bearing debt is a driver of perpetual economic growth.<sup>67</sup> It is only viable in an expanding economy. If economic growth stops (say, due to

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<sup>61</sup> Orlov, 27.

<sup>62</sup> See, Richard Heinberg *The End of Growth* (New Society Publishers, 2011).

<sup>63</sup> See, Deirdre Kent, *Healthy Money, Healthy Planet* (Craig Potton, Nelson, NZ, 2005).

<sup>64</sup> See, Albert Bartlett, above.

<sup>65</sup> Orlov, 22.

<sup>66</sup> Ibid.

<sup>67</sup> See, Bernard Lietaer *The Future of Money* (Random House, 2001).

planetary boundaries being crossed or because of energy constraints) debt will become a problem.<sup>68</sup> Interestingly, the connection between expansion and debt is not new. In Ancient Mesopotamia (where the practice of loaning money at interest was first invented), debt amnesties were instituted to avoid threats of social breakdown. In contrast, Ancient Greek cities facing debt crises (after Solon) turned to policies of expansion.<sup>69</sup>

As an illustration of the exponential function in early British case law take *Thornborow v Whitacre* (1705).<sup>70</sup> In the words of Baker:<sup>71</sup>

Thornborow met farmer Whitacre and said to him: " Let us strike a bargain: If I pay you a "5 note down now, will you give me two rye corns next Monday, four on Monday week, eight on Monday fortnight, and so on, doubling it every Monday for a year?" Farmer Whitacre not stopping to estimate the result of such a bargain, and thinking the money easily earned, with avidity accepted the offer, and the bargain was made. But when the too hasty Whitacre came to calculate how much rye he should have to deliver, he found that it came to more than was grown in a year in all England.

The court noted that "the contract was a foolish one..." Reading the case today, we are perhaps amused by the hapless farmer Whitacre; yet modern economies are locked in to the same kind of exponential function.

Gibbon's *Decline and Fall* illustrates that collapses of empires can take many centuries. Similarly, the Earth has a threshold of resilience, meaning that trends in the erosion of global ecological integrity are gradual.<sup>72</sup> In contrast, history shows that financial collapses can occur rather rapidly. A financial collapse could be triggered by a shock in the real world (such as energy or resource constraints), but could also be triggered by a psychological phenomenon such as a rapid loss of confidence. There is also the possibility of an unexpected event (which Taleb calls a "black swan").<sup>73</sup> In a financial collapse, faith in business as usual approaches is lost. The future is no longer assumed to resemble the past in any way that allows risk to be assessed and financial assets to be guaranteed. Financial institutions become insolvent, savings are wiped out and access to capital is lost.<sup>74</sup>

Margrit Kennedy argues for monetary reform, proposing interest and inflation free money.<sup>75</sup> There are various other proposals for monetary reform, at national levels and local levels.<sup>76</sup> However, large scale reform seems unlikely, due to the power of banks and financial institutions. Ecological economics provides an alternative to the model of infinite economic model growth described above.<sup>77</sup> Heinberg explains: "a

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<sup>68</sup> Orlov, 22.

<sup>69</sup> Graeber, above.

<sup>70</sup> *Thornborow v Whitacre* (1705) 2 Ld Raym 1164, 92 ER 270 (KB).

<sup>71</sup> John Freeman Baker *A Treatise on the Law of Sales of Goods, Wares and Merchandise As Affected By the Statute of Frauds*. (London: Forgotten Books, 2013) (Original work published 1887) 318-9.

<sup>72</sup> Rockstrom et al, note that this can "lull us into a false sense of security".

<sup>73</sup> NN Taleb *The Black Swan: The Impact of the Highly Improbable* (Random House, 2007).

<sup>74</sup> Orlov, 17.

<sup>75</sup> Margrit Kennedy *Interest and Inflation Free Money* (Seva International, Lansing MI, 1995).

<sup>76</sup> See Michael Shuman *Local Dollars, Local Sense* (Chelsea Green, 2012).

<sup>77</sup> William E Rees "Confronting collapse: Human cognition and the challenge for economics" in Westra, Taylor and

sustainable society's economy will necessarily be steady-state, not requiring constant growth. It will be based on the use of renewable resources harvested at a rate slower than that of natural replenishment; and on the use of non-renewable resources at declining rates, with metals and minerals recycled and reused wherever possible. Human population will have to achieve a level that can be supported by resources used in this way..."<sup>78</sup> While conceivable, many believe it unlikely that states will voluntarily adopt an alternative economic paradigm.<sup>79</sup>

A financial collapse could entail a reduction in economic complexity. Thus, rather than by choice, something like a steady-state economy may be determined by default. Such a reversion to simpler, stable and more sustainable activity will only work on a smaller scale. After a community experiences a financial collapse, it will become apparent that money is just a set of human arrangements. Money has always been a matter of political contention.<sup>80</sup> For example, Ancient Greek city states would issue their own currencies, as a mark of independence. In the Anthropocene, local currencies may have more of a chance to increase in importance, as outlined in Michael Shuman's *Local Dollars, Local Sense*. Lawyers may play a role here, for example, in developing legal frameworks for local government means of exchange.

A community may assume that money is a *conditio sine qua non* for its existence and well-being. But, after a financial collapse, communities may wish to reevaluate that assumption. Many thriving communities have little or no money (as will be illustrated in 'Commercial Integrity', below). When we use money, we cede power to those who create money (by creating debt) and who destroy money (by canceling debt).<sup>81</sup> It depersonalizes economic relations, so that people, animals and ecosystems become numbers. Money has been used since its earliest examples as a tool of wealth extraction.<sup>82</sup> However, life without abject reliance on global or even national finance, is possible and maybe even desirable. It has happened before and it can happen again.

### **3.4. Commercial Integrity**

Let us now consider, what the relationship is between commercial integrity and ecological integrity. Are these spheres related, and if so, how? What might commercial integrity mean? Gaines has rightly expressed concern about "depersonalized economic relationships."<sup>83</sup> Does this perhaps point us to an alternative conception of commercial relations, more congruent with the achievement of ecological integrity? Most people in 'developed' economies are dependent for survival on strangers halfway across the world who provide most of their material needs. There is a high level of dependence on financialized, commercialized, impersonal systems. Global supply chains are long and distant. In an environment where most of one's needs are addressed by readily available, standardized

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Michelot (eds) *Confronting Economic and Ecological Collapse* (Routledge, Abingdon, 2013).

<sup>78</sup> Heinberg, above, 281.

<sup>79</sup> Rees

<sup>80</sup> Graeber

<sup>81</sup> Orlov, 51.

<sup>82</sup> Ibid.

<sup>83</sup> Gaines, 10208.

product-service offerings, actual human relationships become a luxury reserved for sex and fun.<sup>84</sup> People live in communities, but they do not need each other for the essentials of life. Rather, impersonal trade currently occupies the dominant position in commercial relations between people.<sup>85</sup>

It is possible that a financial collapse (that is, in the abstract realm of modern finance) could lead to a disruption of actual commercial activity. This may be minor, or more severe. In a commercial collapse, faith that “the market shall provide” is lost. Money is devalued and/or becomes scarce. Commodities are hoarded, import and retail chains break down and widespread shortages of survival necessities become the norm.

Ecological economics (discussed above) provides a model which would enhance both resilience of commercial systems and ecological integrity. As one example, global commerce moves masses of freight, much of which could not be considered essential in terms of Maslow’s hierarchy of needs. Efforts can be made to reduce long, energy-hungry supply chains, by relocalising food production. Governance policies could conceivably reverse, to an extent at least, the move to large industrial agribusinesses (which are addicted to fossil fuels and artificial inputs), and revert to smaller scale family farming. There is no reason why food production should be relegated to the area of technology. People grew and gathered food with little or no technology for many thousands of years.<sup>86</sup> F. H. King’s fascinating 1911 book, *Farmers of Forty Centuries; Or, Permanent Agriculture in China, Korea, and Japan*, explains how these regions sustained enormous populations for millennia on tiny amounts of land, without mechanization, pesticides, or chemical fertilizers. Instead, they relied on sophisticated crop rotation, interplanting, and ecological relationships among farm plants, animals, and people. With such a model, for most of its history China maintained the highest standard of living in the world – even England only really overtook it in the 1820s, well past the time of the Industrial Revolution.<sup>87</sup> The example of Ancient China shows that while there may be dismay at the current lack of environmental consensus between states, a large, hierarchical state *can* be ecologically sustainable (at least, when based on sophisticated governance and organic farming). As JM Greer observes, “while Utopia is not an option, societies that are humane, cultured and sustainable are quite another matter. There have been plenty of them in the past; there can be many more in the future.”<sup>88</sup>

An example of one model of commerce more congruent with ecological sustainability is the so called “gift economy”. Depersonalised modern commerce is a commercial model markedly different from other historical modes of economic activity. It is a curious point that in traditional societies, trade and theft formed a continuum.<sup>89</sup> These societies had “gift economies.”<sup>90</sup> The norm in many traditional societies can be conceptualized by a relationships pyramid (like the food pyramid).<sup>91</sup> Fitting in the bottom of the pyramid, most economic relations occurred between immediate and extended family and one’s tribe or community in the form of gift. In the middle layer

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<sup>84</sup> Dmitry Orlov *Reinventing Collapse* (New Society Publishers, Canada, 2011) 165.

<sup>85</sup> Orlov, 99.

<sup>86</sup> Orlov *Reinventing Collapse* 33.

<sup>87</sup> Graeber.

<sup>88</sup> JM Greer *The Ecotechnic Future* (Gabriola Island, BC: New Society, 2009).

<sup>89</sup> Orlov, 88. The links can also be seen in Adam Smith’s term “truck and barter”, where the “truck” is related to the word “trick” (Graeber).

<sup>90</sup> Marcel Mauss *The Gift* (1950, trans Ian Cunnison, 1954).

<sup>91</sup> Orlov, 85-6.

of the pyramid would be situated friends and allies, with (still personal) economic acts in the form of barter and tribute (less frequently than gifts). Finally, in the smallest, top triangle would be placed strangers, with whom one occasionally engaged in (impersonal) trade. In modern commerce, therefore, we have flipped the “gift economy” upside down, with trade predominating and with gifts used mainly for ceremonial uses.

Of course, it is not suggested that reversion to a traditional “gift economy” would be a viable option in the Anthropocene. However, the anthropological record shows it has been present for long stretches of human prehistory and appears to have been ecologically sustainable. Perhaps it can throw the current system into sharper relief, prompting reflection on how to increase commercial resilience and integrity. For example, steps may be taken to rehumanize economic relations, by dealing with people you actually know, and dealing with them face to face; avoiding use of money and documents, while emphasizing trust, integrity and verbal agreements.<sup>92</sup> Commercial resilience (and thus integrity) could be enhanced by giving preference to family, relations (even distant ones), then old friends and neighbours, then new friends and neighbours; while doing one’s best to minimise dealings with distant strangers, including representatives of corporations.<sup>93</sup> The transition from a framework where services are rendered by strangers to one where needs are served by friends and acquaintances will bring more and more activities back into the home: the kitchen, the basement workshop, the back yard and the home office.<sup>94</sup> Governance structures which promote, or at least permit such developments, will allow an increase in commercial resilience (and therefore, commercial integrity). Furthermore, commercial dealings based on trust will foster a different ethos in the community.

It is possible that in the Anthropocene, with a reduction in opportunities for individualistic economic activity, the family could reemerge as a fundamentally important economic unit. The “family as an economic unit” is a successful human cultural universal: a family is usually three generations (at a minimum), living together, pooling resources and allocating them in the best interests of the whole. This, in turn, could strengthen communities, because a strong community is made up of strong families.<sup>95</sup> A community, in its truest sense, is one in which people know each other and are willing to help each other. This may lead to increased prospects for alternative, autonomous governance. An autonomous community is a band of such families capable of self-governance.<sup>96</sup>

Another model of commerce emerges from historical research (of court cases) done by Craig Muldrew.<sup>97</sup> This has revealed that, in smaller towns in 16<sup>th</sup> and 17<sup>th</sup> England, ordinary people such as the local butcher or baker would put things on “tab”. In a typical village, the only people likely to pay in cash were passing travelers. Everyone was thus both creditor and debtor, with accounts settled around every 6 months.

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<sup>92</sup> Ibid, 99.

<sup>93</sup> Orlov, 99.

<sup>94</sup> Orlov, *Reinventing Collapse* 165.

<sup>95</sup> Orlov, 39.

<sup>96</sup> Ibid., 42.

<sup>97</sup> Craig Muldrew *The Economy of Obligation: The Culture of Credit and Social Relations in Early Modern England* (Palgrave, New York, 1998).

These English villagers seem to have seen no contradiction between older systems of mutual aid and “the market”. On the one hand, they believed strongly in the collective stewardship of fields, streams and forests, and the need to help neighbours in difficulty. On the other hand, markets, too, were entirely founded on mutual trust.

In such a context, credit did not denote interest-bearing bank-debt (as it largely does for us today). The word credit comes from the same root as the words creed or credibility, referring to one’s trustworthiness.<sup>98</sup> This can perhaps provide a starting point to imagine a rehumanised commercial context. Commercial integrity would increasingly be based on one’s own integrity, in the moral sense of one’s honesty, keeping one’s word and faithfully fulfilling one’s obligations. This is a stark contrast to Adam Smith’s vision of rational economic actors motivated by self-interest.<sup>99</sup> In such a market economy, individuals are motivated by greed and fear. The pernicious nature of this kind of market is illustrated by the common view that friends and family shouldn’t have business dealings with each other.<sup>100</sup> Such commercial relations may even be considered corrosive to the human spirit. If, in the Anthropocene, a community experiences commercial collapse in the form of seriously disrupted access to global supply chains, in addition to difficulties in making a transition, a new ethic of commercial autonomy and integrity may be a possibility. The community may revert from a Darwinian or Hobbesian “war of all against all” to a Kropotkin-like ethic of community cooperation.<sup>101</sup>

### 3.5. Political Integrity

Governments are good at some things: protecting national borders, building infrastructure, and providing primary education and basic healthcare. But, in the current situation, states seem to be having great difficulty in agreeing about the fundamental importance of sustainability and ecological integrity (including implementing it through meaningful change). What can be holding states back? To take just one issue, i.e., that of defense from the perspective of the realist school of political philosophy. That is, a nation with an economy within the bounds of ecological integrity (a steady state economy) would have difficulty securing its well stewarded resources against a more powerful aggressor with a resource-hungry industrial-military growth economy.<sup>102</sup> Ancient China was noted above as a sustainable state, based on organic farming. China’s arrangements were unable to compete with the industrialised West, leading to its “century of shame.” Pre-Meiji Japan also discovered, in the nineteenth century, that the options were to either maintain its low impact agrarian economy and be overrun by Western industrial-

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<sup>98</sup> Graeber

<sup>99</sup> There is a curious link between commercial integrity and prohibitions of lending money at interest. Legalization of interest began to change things by the 1580s, with interest bearing loans common between villagers. This had a social impact, with “credit” becoming unattached from real relations of trust between individuals. (Interestingly, “self-interest” is formed using ‘interesse’, the Roman word for “interest”). The *psychology of debt* is a factor to consider in relation to achieving ecological integrity. For the debtor, the world is reduced to potential merchandise and human relations become a matter of cost benefit calculation (Graeber).

<sup>100</sup> Orlov, 92.

<sup>101</sup> Peter Kropotkin, *Mutual Aid: A Factor in Evolution*, 1902.

<sup>102</sup> Of course, at the dawn of the 21<sup>st</sup> century, military technology has progressed to levels of lethality far beyond the capabilities of the somewhat quaint and archaic term, *industrial* military.

military powers, or to rapidly industrialize and earn a place – by defeating Russia in 1904-5 at the conference table of nations. It is clear that before the Industrial Revolution - states were not inherently incapable of sustainability. The state system after the Industrial Revolution with industrial military technology, might have changed things. Consider, for example, the level of complexity proper to the current world military powers (such as China and the United States), if they were to transition their economies to maintain ecological integrity. It emerges, therefore, that political integrity is a practical issue which is worth considering in relation to the achievement of global ecological integrity.

States will remain the primary form of political organization for the foreseeable future.<sup>103</sup> However, this is an attempt to think through the Anthropocene in terms of the big picture. (Heidegger, in 1966, said he thought it might take 300 years to think through the fundamental thrust of our present age).<sup>104</sup> Perhaps later in the Anthropocene, the nation state will be viewed as an ephemeral form of political organization. From an anthropological point of view, anarchic systems of governance have been the norm in human societies for most of human existence.<sup>105</sup> If states continue with the current model over the longer term, the various possibilities of ecological, energy, financial and commercial collapse may lead to a drastic reduction in political integrity. When this loss of integrity goes beyond a certain threshold point, the term political collapse becomes apt.

In the Anthropocene, the following extreme scenario could be imagined. A southern European nation finally decides that its farce with debts has gone on long enough. Its unorthodox economic measures cause catastrophic loss of confidence in the tools of globalized finance, leading to a global financial crisis. This causes problems in commerce, because cargos cannot be financed. With global supply chain disruption, a nation's business activity is drastically curtailed. This impacts tax revenues, which reduces the state's ability to govern and control some areas, particularly in areas distant from main centers. In a scenario of political collapse, faith that the government will take care of you is lost. For example, as officials attempt to mitigate widespread loss of access to commercial sources of survival necessities fail to make a difference, the political establishment loses legitimacy and relevance. Political collapse could be relatively swift (like a financial collapse), or it could be a much slower process, with legitimacy and control over areas gradually eroding over the long term.

The conventional solution to the environmental crisis is to hope that our politicians will eventually come through in response to a dramatic shift in the consciousness of the people. The dream of a global economy, globally governed to remain within global ecological limits, would (if achieved) be preferable. It is looking increasingly likely, however, that reality will prove less tidy. Doubts have been expressed about states voluntarily and collectively agreeing to transition to a model which respects planetary boundaries. However, at present there is not an easily detectable, broad shift in consciousness nationally or globally. If such a shift happens, possibly emerging from grassroots democracy, reform may be possible.

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<sup>103</sup> Rees, 309.

<sup>104</sup> Martin Heidegger, "Nur noch ein Gott kann uns retten," *Der Spiegel* 30 (Mai, 1976): 193-219. Trans. by W. Richardson as "Only a God Can Save Us" in *Heidegger: The Man and the Thinker* (1981), ed. T. Sheehan 45-67.

<sup>105</sup> Graeber.

Others perceive insurmountable obstacles at the present time.<sup>106</sup> There are still calls for change. But, one gets the sense that hopes for such calls for change are different from when they were made in the 1970s. Frustrated with official structures, some try to act for change outside these institutions. Of politicians, they may adhere to Solzhenitsyn's maxim of "[d]on't trust them, don't fear them, don't ask anything of them."

The degrowth movement have rediscovered anarchy's charms. Anarchy can be defined as of hierarchy (from the Greek 'an', not/without and 'archos', ruler).<sup>107</sup> With this concept, different forms and levels of governance can be viewed to fall somewhere on a continuum of anarchy to hierarchy. The degrowth movement has doubts about large scale representative democracy, suspecting true democracy to only function in a smaller polis or community.<sup>108</sup> The concept of autonomy is an important notion in the movement. Autonomy derives *auto* (self) and *nomos* (custom, law). A community seeking autonomy will attempt to become free from contingent global mechanisms.<sup>109</sup>

It has been suggested that the city state, or smaller political communities, may be more sustainable in scale and a better form of political organization to achieve ecological integrity than larger scale nation states.<sup>110</sup> The city state has been one of the most successful political constructs in human history. The Ancient Greek *polis* and the free cities of Medieval Europe were conducive to sophisticated culture and learning.<sup>111</sup> Yet, proposals advocating the city state have been criticized by Sanford, who disavows the idea as elitist.<sup>112</sup> This is a valid concern. However, as will be outlined, lower level scales of governance may become the default choice, in some places, in the Anthropocene. It is also worth noting that many current nation states have elitist elements that undermine social coherence and trust. For example, it is not an unheard of sentiment that justice systems in some states tend in practice to work in favour of the educated, the corporations and the rich, and take unfair advantage of the uneducated, the private citizen and the poor.

Burdon is attracted to successful models of the Paris commune and Israeli Kibbutzim.<sup>113</sup> However, he recognises the issue of scale, with small communities being unequipped to deal with large-scale problems such as climate change. Like Burdon, Garver notes the problem of interdependencies (pollution having no borders), and sees the European principle of subsidiarity as a way to reconcile the local and transnational.<sup>114</sup> Along with the issue of scale is the practical issue that the

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<sup>106</sup> For example, see Peter D Burdon "The Project of Earth Democracy" in Westra, Taylor and Michelot (eds) *Confronting Economic and Ecological Collapse* (Routledge, Abingdon, 2013) at 252: "the capitalist class will never willingly surrender power."

<sup>107</sup> Orlov, 133.

<sup>108</sup> Geoff Garver "Moving forward with planetary boundaries and degrowth" in Westra, Taylor and Michelot (eds) *Confronting Economic and Ecological Collapse* (Routledge, Abingdon, 2013) 210.

<sup>109</sup> Noémie Candiago "The virtuous cycle of degrowth and ecological debt: A new paradigm for public international law?" in Westra, Taylor and Michelot (eds) *Confronting Economic and Ecological Collapse* (Routledge, Abingdon, 2013), 223.

<sup>110</sup> William Ophuls *Plato's Revenge: Politics in the Age of Ecology* (MIT Press, 2011).

<sup>111</sup> It is noted, however, that Athens was still built on slave labour and – as Thucydides describes – eventually had their own little 'empire', with many conniving great plans to dominate the whole Mediterranean.

<sup>112</sup> Gaines, 10205.

<sup>113</sup> Burdon, 248.

<sup>114</sup> Ibid.

current political arrangement is unlikely to voluntarily devolve into such small communities, or even to an artisanal set of intensely local polities, along the lines of the prosperous city states of medieval Europe.

In the Anthropocene, ecological challenges will probably result in stress for affected communities. In challenging times, there is the danger of people starting to think about strong leadership. During the difficult times of the Roman republic, dictatorship was seen as a good form of governance in a bad situation. Similarly, even “sustainability thinkers” may at times feel a sense of frustration with the slow progress democracy is making in relation to pressing environmental challenges.<sup>115</sup> However, history shows that dictatorships can be problematic. Particularly, in attempting to achieve ecological integrity and sustainability, without a broad change in community ethos through education (among others), any reforms will themselves be unsustainable. Therefore, any erosions of democracy must be rejected. Rather, the importance of education (stressed above) re-emerges. Thomas Jefferson reminds us: “I know of no safe repository of the ultimate power of society but people. And if we think them not enlightened enough, the remedy is not to take the power from them, but to inform them by education.”<sup>116</sup>

Ideas about local autonomy and anarchist thought about governance could not compete in the West in the 20<sup>th</sup> century. Under ‘New Deal’ arrangements, the working class gained the right to unionize, strike and bargain collectively. Public education, government pensions and health care were provided. This was all in exchange for submitting to the hierarchical control system of an industrial state.<sup>117</sup> Now, for various reasons, the industrial experiment is looking increasingly unattractive, and ideas about local autonomy are reemerging in sustainability thinking.

In a situation of political collapse, when the centralized state no longer governs, people will have to revert to various forms of anarchic, autonomous self-governance. If the state loses coercive power, it can remain defunct as a ceremonial vestige.<sup>118</sup> In its stead will come a myriad of tiny polities, with smaller-scale economies. Those groups that have sufficient social cohesion, direct access to natural resources, and enough cultural wealth (especially in the form of face-to-face relationships and oral traditions), would manage to reconfigure in the absence of modern finance, commerce and the state. While imaginable in some countries, obviously there are significant challenges which might arise in such a scenario in other contexts.<sup>119</sup> Sustainable governance voluntarily chosen by the state would make a smoother transition to?. But, in the Anthropocene, it is conceivable that a country (outside or even within the West) may experience loss of political integrity to some extent. The

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<sup>115</sup> Burdon, at 246, mentions (but rejects) the idea of a benevolent totalitarian regime. For a detailed discussion, see Michael E Zimmerman “Rethinking the Heidegger-Deep Ecology Relationship” (1993) 15 *Environmental Ethics* 195.

<sup>116</sup> Thomas Jefferson to William C. Jarvis, 1820. Memorial Edition 15, 279.

<sup>117</sup> Orlov, 126.

<sup>118</sup> Orlov, 162.

<sup>119</sup> For example, in a state with nuclear power-plants, it is obviously desirable that the government maintains the ability to manage them. All of them have to be supplied with sufficient energy for many decades, or they will be in danger of melting down like Fukushima. Perhaps in the Anthropocene it is time to challenge the assumption that all nations with nuclear power will – for the time frame required – be intact enough to manage them and handle any nuclear emergency.

Anthropocene as a geological epoch, is by definition a very long time frame. What will future governance look like in 300 years? If this question were asked by John Locke and Constantine, the latter would probably be more surprised than the former by the actual shape of governance 300 years after his time. While “anarchic” forms of governance seem implausible now, they may well gain more prominence during the Anthropocene. So, the challenge in the Anthropocene may be, in Hegelian terms, to progress from the thesis of anarchic governance in human prehistory, through the antithesis of the modern nation state, and achieve a synthesis that is able to incorporate true local autonomy and deal with transnational pollution and ecological destruction arising from modern technology.

#### **4. Conclusion: Shaping the ‘new story’**

Under the prevailing story of economic growth, people will continue to live unsustainably, until they can no longer do so.<sup>120</sup> It is likely there will be various successful efforts for 'change' (stemming from business, technology and sub-cultures). But, ultimately, within the old story, smart business or smart technology will not be enough to stay within the safe operating space for humanity that planetary boundaries require. The narratives that shape our lives, attitudes and behaviours urgently need changing. In the Anthropocene, it is possible that people will increasingly find the old story of growth unconvincing. In such a scenario, ecological law can perhaps play a part in shaping a new story. The narrative will, of course, also be influenced by the experiences of our children and grandchildren, to whom we have bequeathed a planet very different to the one enjoyed by humanity during the Holocene. It is conceivable that, through such experience, the next few generations will fully embrace (as a crucial and self-evident norm of natural law) the fundamental importance of ecological integrity. The scenarios of the world-system sketched in this chapter are just that, sketches, but they may be sufficient to illustrate, how foundational ecological integrity will have to be for living successfully in the Anthropocene.

#### **Bibliography**

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<sup>120</sup> See Jorgen Randers 2052: *A Global Forecast for the Next Forty Years* (Chelsea Green, 2012).