Article:
Heikkurinen, P (2019) Degrowth: A metamorphosis in being. Environment and Planning E: Nature and Space, 2 (3). pp. 258-547. ISSN 2514-8486

https://doi.org/10.1177/2514848618822511

ACCEPTED FOR PUBLICATION, PRE-PRINTED VERSION

Reference: Heikkurinen, P. (2019). Degrowth: A metamorphosis is being, *Environment and Planning E: Nature and Space,* 1-33, in print.

Degrowth: a metamorphosis in being

Pasi Heikkurinen

University of Helsinki, Department of Economics and Management
University of Leeds, Sustainability Research Institute

Abstract

The call to transform the growth society lacks an analysis of the human will. Problematically for degrowth, the enactment of this so-called 'will to transform' has undesired matter-energetic consequences. Every act of transformation requires matter-energy, adding to the cumulative throughput of societies. To revert the ecospherical metabolism from a state of overshoot to one of degrowth, a metamorphosis in *being* is proposed. Building on Heidegger's fundamental ontology, the article invites degrowth practitioners to become releasers by waiting for the unexpected and then to prepare for the expected, the collapse of civilisation. A practice of releasement, where meditative thinking resides, is considered as an effective way to counter the destructive will to transform, and hence contribute to degrowth.

Keywords: degrowth; metamorphosis; ontology; phenomenology; transformation

Introduction

The unsustainability of human activities has led scholars from different disciplines (Atkisson, 2012; Asara et al., 2015; Abson et al. 2017) and from the international community (UN, 2016; EU, 2017) to call for 'transformations'. This discursive turn will be welcomed from both ecological and cultural points of view, if it comes to signify that the reformist paradigm calling for 'sustainability transitions' (e.g., Kemp, 1994; Smith et al., 2005; Geels, 2017) will be complemented (or even replaced) with a more radical agenda for change, such as the degrowth movement (see Latouche, [2007] 2009; Martínez-Alier et al., 2010; D'Alisa et al., 2015). Without reverting to essentialism, this movement of degrowth could be characterized as an exploration of alternative values, practices, and structures to the growth paradigm. Albeit the movement encompasses a variety of political and philosophical ideas (Kallis et al., 2012; Demaria et al., 2013; Sekulova et al., 2013), the minimum requirement of the degrowth condition is a reduction of matter-energy throughput in a society (Heikkurinen, 2018). But whether the transformation discourse will take this *sine qua non* seriously is another question. There is at least a danger that the debate on transformations will not support the revolutionary aims of degrowth, but instead become another buzzword in the conceptual toolkit of reformers and quasi-radicals, and consequently, the 'transformation' will be about seeking to decouple economic growth from ecospherical harm through further technologization. As a questionable, yet likely, outcome of such a conceptual hijack, the understanding of what actually needs to change and how, will not be altered significantly (see Bonnedahl and Heikkurinen, 2019).

Signs of this kind of lack of rigour can be identified in the transformation literature, as 'analytical clarity is often superseded by visionary and strategic orientations' (Brand, 2016: p. 505). If instead of offering vague conceptual connections between sustainable means and ends, a more explicit and solid theoretical perspective is presented and applied to transformations, there

seems to be a tendency to employ a rather one-dimensional view of change. Somewhat typically of the transformation literature, Wright (2013: p. 2), for example, assumes that it is the 'institutions and social structures and processes' that are central to transformations. Such a structuralist perspective emphasizes the role of governance arrangements and appears to have a strong foothold in thinking about transformations. Even in the context of the emerging degrowth theory, 'the majority of […] proposals are national top-down approaches, focusing on government as a major driver of change, rather than local bottom-up approaches' (Cosme et al., 2017: p. 321). This is not only problematic in terms of providing a theoretically weak explanation of how change takes place (as critiqued in post-structuralist theorizing, for instance), but is also a challenging position in terms of practice, as the current age of neoliberal capitalism is known for amalgamation of the public and private spheres of human action (see e.g. Scott, 1998; Lazzarato, 2005). That is to say, the so-called democratic structures are largely steered by markets and driven by the interests of capital.

But how should the necessary transformative changes then be conceived and conceptualized in order to contribute to degrowth? Aiming to advance understanding and debate on this question, this article begins by analysing the idea of transformation (Section 2) and both conceptualizing and problematizing its underlying drive, the human will to transform (Section 3). The article then moves on to outline a phenomenological response for triggering profound changes in the spirit of degrowth beyond this will (Section 4).

Among the article's key findings are that the discourse on transformations is mainly ontic[1] as it emphasizes 'the social' or 'the political' as the source of

[1] '*Ontic* is an adjective that Heidegger uses to designate a specific entity (or specific entities) as well as the description, interpretation, or investigation of it (or them). Heidegger contrasts an ontic investigation with an ontological investigation that is directed at disclosing an entity's manner of being as such'. (Dahlstrom, 2013: p. 146). That is, ontic questions are concerned with situational, tangible and specific matters, while ontology deals directly with being (Heidegger, [1927] 2012). In line with Heidegger, this study assumes that to gain a more complete understanding of the phenomenon of transformation, an enquiry must also enter the ontological realm that underlies the ontical.

change. By doing so, it leaves aside ontological questions (relating to being) that are crucial for the understanding of change of great magnitude. The ontic investigations encourage thinking about what should be transformed in the socio-political sphere, as well as how that should be undertaken and when, but do not permit questioning of the transformation itself. Examining transformation beyond the ontical makes it clear that while the transformation discourse has its technical and theoretical issues, the main problem is the insatiable urge to endlessly 'transform' the world that underlies the call for transformations. Building on Nietzsche's ([1882] 2001; [1883-1888] 1968) notion of 'will to power', this drive is conceptualized in this article as the 'will to transform', so shedding light on the source of the transformation discourse[2]. The observation that humans experience an urgency to transform the world, while this transformation is at the same time a root cause of the ecospherical crisis, is referred to as the transformation paradox.

Applying a neo-Heideggerian[3] lens to the research question makes it apparent that ontological investigations on transformations are required to complement the ontic analyses. As regards the ontic craving to make transformations happen, releasement (*Gelassenheit*) is proposed as an invaluable practice for the degrowth movement. However, as any strict distinctions between the 'will to transform' and 'releasement' are considered insufficient, the article reflects on the balance between the calculative transformation of entities and the meditative letting-be. The study recommends that rather than merely enacting the will to transform, degrowth practitioners should prepare for a metamorphosis in being.

[2] Li's (2007) critique of the will, in the form of will to improve social conditions through development interventions by a broad array of (more of less colonial actors), resembles the idea of will to transform outlined in this article. An in-depth analysis is needed to map the synergies between studies problematizing the will in relation to issues of social justice, on the one hand, and environmental justice, on the other.

[3] By 'neo-Heideggerian', the study refers to a broad array of phenomenological perspectives explicitly building on and/or connecting to certain concepts, aspects, or ideas of Heidegger. The study neither accepts Heidegger's involvement with the National Socialists nor denies the link between his philosophy and politics. His work offers diverse avenues for research, including studies where his philosophy is not analysed in relation to his political commitments (see Blok, 2012).

The problem with transformations

The manner in which Karl Polanyi uses the concept of transformation in *The Great Transformation* does not convey anything positive or desired, but the contrary. For him, the notion of a great transformation primarily refers to the rise of market liberalism that led to the Great Depression and the rise of fascism in Europe. The great transformation thus was a significant event in human history that marked the move to a more efficient economic growth paradigm from the earlier society. Polanyi saw the transformation to this system of self-regulating markets as so complete that he considered it to resemble more 'the metamorphosis of the caterpillar than any alteration than can be expressed in terms of continuous growth and development' (Polanyi, [1944] 2001: p. 44). His definition of a transformation is also reflected in the more recent theorizing on transformations where a 'transformation is […] understood to mean a *profound, substantial and irreversible change*' (Brown et al., 2013: p. 100; emphasis added). The contemporary call for transformations that resonates broadly with actors from both the public and private spheres, and also with the organizations of civil society, however, is significantly different to Polanyi's concept of transformation, namely that the new great transformation is nothing historical but a future being made. But even if a generic description of a transformation as a revolutionary rather than a reformist change could be agreed upon, and taken as an important aim for the modern condition characterized by planetary-scale destruction of the ecosphere, what will actually be considered 'profound, substantial, and irreversible', will largely remain moot. To outline some parameters for distinguishing transformative change from other kinds of change, the article will investigate the term in more detail.

The concept of transformation

The etymology of the word transformation dates back to the mid-fourteenth century. The Latin origin word 'transformare' signified a change in shape, a conversion of an object. Its prefix 'trans' refers to 'across', while the latter part of the word, 'formare', is about forming something. If compared to its conventional conceptual pair of 'reform', which refers to forming something again, transformation signifies a greater, more complete change. These two basic working definitions indicate that that transforming is about changing the form itself, while reform would be about rearranging the form. Moreover, to transform is to bring forth a new form that includes novel elements not limited to the human sphere. In other words, a genuine transformation is not only human doings, but as noted by Blok (2011: p. 114), 'requires that we drop our everyday way of life' […] and 'dwell by the happening of clearing and concealment.' To reform, again, is about reusing the already available elements and reordering them to make a somewhat different kind of form. In this sense, transformation resembles the processes of art (*techne*), which 'concerns the bringing forth of gestalt' (Blok, 2011: p. 101). 'Bringing forth, however, is not exclusive to art: the making of equipment is also a bringing forth and this explains why the Greeks use the same word, τέχνη, for handicraft and for art' (Blok, 2011: p. 105). Consequently, present day transformations must be viewed as having their roots in the ancient concept of 'techne', even if the power of 'logos' has changed the process tremendously. That is, transformations are largely technological.

It is important at this point to further distinguish between the human-induced modifications of the form (both re-formations and trans-formations) that are to a great extent technological, and metamorphic change, which is not a product of human will, or mastery. The difference can be clarified by thinking about the metamorphosis of the caterpillar to the butterfly. The same entity in the matter-energetic reality assumes an entirely different shape, and almost nothing in the entity remains the same. Crucially, it is not only the caterpillar (as an agent of change) that desires a new formation, but there are other forces (beyond the agent and its will) that enable this shapeshift to take place.

Another central difference between these two is that anthropogenic 'transformation', similarly with the intention to reform, is mainly ontic, while 'metamorphosis' has a stronger ontological relation[4]. In phenomenological terms, the metamorphosis is a gestalt-switch.

Thinking about change as ontical places the focus on that which is in the factual, in physical terms, and is therefore certainly important for considering how to reduce matter-energetic throughput. On the spectrum of current proposals for change, the degrowth movement (with its focus on matter-energy flow) is certainly more transformative than reformist. The problem with limiting the analysis to the ontic, however, is that doing so does not grant access to being itself, and consequently any understanding, even about the ontic, remains only partial. But similarly to Heidegger's idea of human being (*Dasein*), degrowth – as a human enterprise – 'is ontically distinctive in that it *is* [also] ontological' (Heidegger, [1927] 2012: p. 32). Owing to its inclusive spirit, this means that degrowth is both ontical and ontological, or ontico-ontological (a term that Heidegger uses in describing human being [ibid]). Accordingly, for the sake of clarity, it is meaningful to contrast 'ontic degrowth', referring to particular issues in relation to the actual reductions in matter-energy throughput, with the unfolding 'degrowth ontology'. But before immersing itself into the ontological, the article will shed light on the concept of transformation from the ontic perspective.

The transformation paradox

It is particularly the paradoxical nature of the call for transformations, where human-induced change is simultaneously the cause of ecospherical problems yet considered to be the solution to them, which demands closer scrutiny. The

[4] While reforms and transformation are considered ontic, a metamorphosis discussed in this article concerns being. Nevertheless, a metaphysical understanding of form, which Heidegger too would reject, is not intended here (see Blok, 2011).

transformation of nature[5], measured in matter-energetic throughput, is identified as the foundational problem of unsustainability (see e.g., Kerschner, 2010; Bonaiuti, 2011; Kallis, 2011). That is, at its simplest, the ecospherical imbalance can be distilled to the overuse of so-called natural resources or capital and consequently emitting too much waste in various forms, such as greenhouse gases, that the global and local ecosystems cannot absorb. In this way, at the core of unsustainability is the fact that too much nature is transformed, and brought deeper into the human sphere, which ecological economists refer to as human-made capital (see e.g., Daly, 1996). For example, rivers are being turned into power generators, fossils into gasoline, and stones into skyscrapers.

Georgescu-Roegen (1975) holds that the rate of transformation can be measured in terms of matter-energy that travels through any organization or society. Usually, the degrowth solution to the problem of a too extensive rate of transformation is the transformation of the social (e.g., Latouche, 2009; D'Alisa et al., 2015; Asara et al., 2015). By way of explanation, to have a successful transformation to a degrowth society, the amount and rate of transformation from nature to the human-controlled sphere must radically decrease, and to slow down this metabolic flow of matter and energy, requires a change to the socio-political order. It is after all, certain kinds of social values, practices, and structures that are considered to define the so-called metabolic flow of human societies.

While this is true, there is a paradox. The embeddedness of human enterprises in nature makes all social, political, and cultural activity dependent on the matter-energetic basis of the ecosphere leading to a painful enigma in the call for transformations for degrowth. The so-called transformation paradox

[5] The position of the present study in defining 'nature' is that all earthbound phenomena are embedded in nature (e.g. Heikkurinen et al., 2016). Hence, 'nature is that which we observe in perception through the senses' (Whitehead, [1920] 1964: p. 2), or the whole (von Wright, 1987). While the blurring of the boundaries between, e.g., humans and non-humans must be acknowledged, they are still considered to be important analytical categories for the degrowth movement. The gradual disappearance of the constructed boundaries between these categories (i.e. hybridization or cyborgization) does not make the categories void and useless.

emerges from the thermodynamic fact that all human-induced transformations require further non-humans to be transformed. Scilicet, matter-energy which humans cannot create, is always needed for action. Every human action, such as changing the fossil-based technological infrastructure to fit renewable energy or even organizing a demonstration, requires matter-energy, and hence increases entropy. And the more transformative action there will be, the more matter-energy is required. But even if these acts of an individual or a collective (e.g. scholars flying to conferences) do not compare to the planetary-scale problems (e.g. CO2 emissions), these two are related in a very direct manner, as the macro is the cumulative outcome of the micro. This all means that paradoxically, in the process of making social transformations happen, which are considered to be the solution to ending growth, there is a need to continue transforming nature, which is the source of further growth.

One of the arguments to counter the paradox is to think that there are 'good transformations' and 'bad transformations', and that the bad ones can and should, be replaced with the good ones. This is very similar to the 'green growth' (see Lorek and Spangenberg, 2014) and 'sustainable growth' (see Daly, 1990) argumentation, as well as to the 'good Anthropocene' narrative (see Hamilton, 2016), which encourages humankind to keep transforming things but doing so differently, and with better quality. The basic problem with the transformative agenda is that it does not challenge whether the acts themselves should be undertaken at all but seeks to improve those acts with 'enhanced' techniques and 'enlightened' goals[6]. For example, academic scholars would not have to quit or even replace their scholarly work with low matter-energy action (such as meditation or dancing), but they could just do better scholarly work at the institute, while the matter-energy intensity can remain unaltered (or may even increase). From a degrowth perspective such 'an improvement' could be a neoclassical economist transitioning into

[6] In terms of ethical theory, this thinking has closely resembles utilitarianism in which the speculated net benefit of the expected consequences can be used to legitimise harmful means.

ecological economics or a scholar publishing more critical article whilst her/his other activities remain the same.

Accordingly, to avoid confusion about what should not be transformed, it is vital to acknowledge the difference in the transformation of human-made nature (e.g. social values, practices, and structures) and the transformation of non-human-made nature (e.g. mountains, lakes, and birds)[7]. This distinction is important because what is being transformed and what is not makes a great difference in the context of degrowth. As Herman Daly (1996) remarks, since humans are not able to substitute non-human processes and 'capital', a critical stock of them must be maintained to enable human existence (see also Holland, 1997). However, as the non-human and the human spheres are not separate from the earthbound whole in neither ontic nor ontological senses, these two can only be separated for analytical purposes, such as to make sense of the transformation discourse.

Critique of transformative action

To this point it has been argued that an anthropogenic transformation always necessitates further transformation of the non-human, as human action is not autonomous from the rest of nature. All human systems on Earth derive their vitality from the non-human sphere by transforming matter into energy, and energy into work. Because of the human dependence on nature, the call for transformation is a call to take an entity (e.g. forest, oil, or lithium) and use it for some human purpose, such as to discharge humans from physical labour. However, even if human action cannot be reduced to the flow of matter-energy, it is nevertheless contingent on non-human entities and processes. Even to *think* about being independent of matter-energy, one needs food and

[7] The notion of non-human nature here refers to entities and processes of nature, which are not human-induced or anthropogenic. The boundaries between these two spheres are increasingly vague, as human activities now influence almost all earthbound beings and processes of nature (see e.g. Abram, 1996). Consequently, it is more precise to consider the human–nature relation as a processual continuum rather than a static dichotomy or dualism, where the current movement is towards having less non-human (or more-than-human) nature on Earth.

water, as well as a shelter. But because thinking (as a mode of action) surely requires substantially less transformation of non-humans than almost any other human action, perhaps meditative refrainment should be emphasized at times over the impulse to just 'act more' in order to meet the minimum ontical requirement of the degrowth movement, that is, the reduced matter-energy flow.

The old environmentalist slogan about thinking globally and then acting locally could be recast as: *think local; reflect; think global*. The urge to quickly act upon the ecospherical crisis is certainly understandable, given the realization of the scale of the anthropogenic catastrophe that the Earth is enduring; however, the caveat involved is that by undertaking more actions, one may further escalate the problems, particularly as human activities are so intertwined with economic processes of growth[8]. From the viewpoint of the Earth, it is precisely *less human action* (not only better action) that is needed. In a similar fashion, even if from a very different perspective, Žižek (2012: p. 1) criticizes the contemporary fetishism of action, suggesting that there is a need to 'start thinking' and 'not get caught into this pseudo-activism and pressure to do something […], the time is to think'. Nevertheless, of course, some action is essential to provide the metabolic requirements of the human species' everyday survival, that is, the basic needs of water, food, shelter, sleep, and sex. It goes without saying that these subsistence-related acts will always have priority in the human sphere over abstract thinking and reproducing the scholarly discourse, however transformative and radical the latter claims to be (cf. Max-Neef, 1991).

[8] The rebound effect, or Jevons paradox, illustrates this intertwinement (see Alcott, 2005). The key observation here is that the improvement of the quality of human activities, e.g. efficiency by means of technology, does not necessarily signify lower matter-energy throughput. Examples of how such a rebound can occur can be given in the context of household energy systems. Changing old incandescent light bulbs to new led bulbs can mean less energy consumed when using the lights, but the overall energy consumption of the household may remain the same (or even increase) due to this alternation. This is because the 'saved' energy is used elsewhere. The rebound effect is augmented in a market economy, where a decrease in demand tends to lower prices in order to bring back the temporarily reduced demand.

In the spirit of degrowth, it is therefore of primary importance to ask what are the direct matter-energetic consequences of human actions targeting degrowth. How destructive to nature, for instance, is the kind of thinking that manifests in producing the transformation discourse. With its million-dollar research projects and conference travel, the work of creating the transformation has not only become a profession for many academics, consultants, managers, politicians, and civil servants, but has created an industry with a growth imperative of its own. This cultural criticism may feel rather beside the point, but is in fact at the core of the (ontic) argument so far. Another key observation is that the call for transformations may end up being very reformist unless the matter-energy reduction requirement is taken seriously, including as it relates to the activities of the degrowth proponents. In this respect, the degrowth movement is not an exception to any other agent of change: the ends do not justify the means. And since all human action increases the metabolic flow of societies, reflection on which actions to undertake (which is relatively low in terms of throughput) is vital in the already overshooting growth society.

However, it is not the intention of the article to encourage a cost–benefit calculus and turn the human–non-human relationship into a vast harm–benefit exercise[9]. Instead, this article intends to show that the common response to the call for transformation by accelerating action, be it political influencing, academic work, ecopreneurship or non-governmental activity, always has some 'negative' matter-energetic consequences. In entropic terms, this means the acts of humans always result in a deficit, as 'the cost of any biological or economic enterprise is always greater than the product' (Georgescu-Roegen, [1970] 2011: p. 52). Phrased as simply as possible: more human action, more chaos in nature.

[9] First, the so-called positive impacts of human activities on the non-human sphere are impossible to evaluate, if they even exist in the first place (see Ehrenfeld, 1978; Pauly, 2014). This is mainly due to the apparent limits of human knowledge about nature as a whole, and in particular in the Anthropocene, as boundaries between humans and non-humans are increasingly hazy. Secondly, being human in the world is much more than optimisation; human life cannot be reduced to any single principle or goal.

The main problem of the transformation discourse then appears to be not its technical and theoretical problems identified in the previous literature (see e.g. Brown et al., 2013; Brand, 2016), but the transformation itself, or to be more accurate, the human actions that lead to further transformation of nature. That is to say, for the purposes of degrowth, both the amount *and* kind of transformation are the problem, as all human-induced transformations require more transformation of nature. The simple solution to this is to undertake fewer transformations, but that is easier said than done. Before examining potential solutions, it is important to understand what drives transformations.

The will to transform

By transforming nature, humans have taken their place on Earth as a global force. In fact, this insatiable drive to conquer and master the planet (Hamilton, 2013) can be considered to characterize humankind, the luxurious animal, as Nietzsche put it. It is important to note, however, that humans have not contributed equally to the transformation of the non-human nature, with the contribution of the high-consuming classes being prominent (Ulvila and Wilén, 2017). Some humans and societies are obviously more luxurious than others. But in addition to blaming the usual suspects of capitalism (Foster, 2011; Martínez-Alier, 2009), productivism (Latouche, 2009; Baykan, 2007), and technology (Heikkurinen, 2018; Samerski, 2018) as the main causes of the present ruin, the article investigates the ontology of transformations. It proposes the 'will to transform' as a focal characterization of what drives transformations and growth, and consequently, has led to the planet to the state of ecospheric overshoot. Moreover, the roots of capitalism, productivism, and technology can all be traced to this inherent drive of humans to transform the social.

Will to power as a foundation

In line with the Nietzschean hypothesis of *will to power (der Wille zur Macht)*, this article assumes that humans—among other beings—share a primary desire for power (Nietzsche, [1882] 2001; [1883-1888] 1968). While this interpretation of the will can be contested, on grounds that include even Nietzsche never explicating its specific meaning (Porter, 2006), some general characteristics can be outlined. 'From the beginning of the second half of the 1880s, Nietzsche proclaimed explicitly that all reality is will to power', suggesting that there is only one intrinsic quality in reality (Aydin, 2007: p. 25). 'According to Nietzsche, the will to power is the fundamental feature of life and ultimately of the universe itself, i.e., it is Nietzsche's answer to the metaphysical question of what Being as such is' (Blok, 2017a: p. 24).

Power for Nietzsche again is relational; 'power in relation to another power' (Blok, 2017a: p. 26), and without this power, causing something would not be possible. It seems that this relationality is not only a quality of humans, but there is a will to power that constitutes the identity of all matter-energetic entities. In the human–nature relationship this power to cause changes in the world is not problematic *per se*. That is, the fact that humans have the knowledge and skills needed to create great causes in the world, as evidenced during the Anthropocene, does not have to signify that the power is used. In practice, however, this of course has not been the case, but at least it is something imaginable. Humans would not have to use their power but to refrain from using it. For example, even if someone possesses the will to have the power to cause harm, and gradually acquires that power, it does not automatically follow that the person/society will use the power to harm, or to do anything at all. It is not until the will to power is established and turned to use—to a drive and enactment to transform things—that it becomes problematic for degrowth.

Blok (2017a) distinguishes the will to power 'as truth' and 'as art'. Both of these drives have their roots on an ontological level, constituting the identities of earthbound beings. 'The will to truth is a necessary condition for life, i.e., for the continuation and preservation of life amidst contingency and change' (Blok, 2017a: p. 25). And hence, it is the stabilizing side of being. Moreover, the will to truth can be considered 'a necessary but not a sufficient condition for life, because it is insufficient for the enhancement and growth of power. Nietzsche therefore says that we are in need of art in order not to be destroyed by the truth' (Blok, 2017a: p. 25). It is then the will to art that enables the transgression of the stabilized identities towards a new form, gestalt, or mode of being (Blok, 2017a), like the 'superman' (*Übermench*) in Nietzsche ([1883-1891] 1997). This distinction is important for the present enquiry, as it highlights the internal tension in the will to power that can also be found in the will to transform. It also shows that the will to art (*techne*) closely resembles the will to transform that underlies modern technology, even if they also have disparities.

The will, both in the form of the will to power and the subsequent will to transform (the use of the power) can be considered to lay beyond good and evil: they just *are*. However, the enactment of these wills does have matter-energetic consequences that can be considered ethically more or less desirable. Moreover, similarly to the will to power, the will to transform is a hypothesis, but one arguably built on an extensive base of empirical evidence. In the rapidly expanding transformation discourse, the will to transform the social life of humans (and hence also to influence the rest of nature) is an unequivocally stated value axiom and considered a main objective of responsible human activity. 'We need to change everything!', the popular motto echoes. This interpretation of the human condition is slightly different from Nietzsche's ([1882] 2001; [1883-1888] 1968), as according to him, humans do not have the drive to transform, but they hold on to the will to power as truth. Accordingly, the change that Nietzsche has in mind is to move from this will to power as truth to the will to power as art, or as

transformation. Painfully, the problem that Nietzsche did not foresee with his route to transgress the animal rationale was the limits that the matter-energetic realities set for the human will to transform. There are thermodynamic consequences of, as well as limits to, making art.

Emerging from the Nietzschean will to power, the will to transform can be described as that force that pushes humans to endlessly craft and reorder the world[10]. In terms of thermodynamics, this rearranging always requires matter-energy, and as an outcome of the activity, the Earth gradually moves from a state of lower entropy to one of higher entropy; or, in other words, from order to chaos. The will is deep discontent to the present order of things and affairs, a desire to leave a mark, which arguably derives its meaning from the assumption of progress. According to the largely accepted premise of progress, the purpose for the human being comes from efforts to move humanity to an improved or more developed state, or to a forward position. In Nietzsche ([1883–1891] 1997), this was the ambition of becoming the superman; and therefore, constant transformation is needed, and stillness is not an option, as the future is assumed to be a better time and place.

Will to transform and techno-capitalism

It is quite reasonable to think that it is also because of this will to transform that technology has become the prevailing mode of being, something Heidegger ([1952–1962] 1977) referred to as Enframing *(Ge-stell)*, and why the ideology of private ownership and the accumulation of wealth has become hegemonic, to use the Marxian expression. That is, without the will to transform, humans would have not developed such advanced means to change

[10] The will to transform is assumed to manifest as a result of both the workings of nature and nurture, or biology and culture. This makes it both a product of history and an innate character of humans. However, it is important to note that there is a collection of other reasons that motivate and drive the destruction of the ecosphere (e.g., greed, stupidity, indifference, naivety, and a host of other traits), many of which are unintentional. By no means should the human action be reduced to the Nietzschean will to power or the will to transform presented in the article. The possible function of these conceptualisations is instead to provide an anchor for the analysis and trying to make sense of the ongoing crisis in the human condition.

the world and its nature. Due to their transformative desire, humans now have great achievements such as modern science and technique that in exchange offer ever better knowledge, instruments, and the frames for transformative action. By means of technology, humans have been able to transform more both in terms of quality and quantity. In addition, neoliberal capitalism has been an extremely apt frame for organizing the efficient transformation of nature to a social, anthropogenic form. In the pre-modern age, the human focus was more on the will to power as truth, albeit certainly including some elements of the will to art, but in the contemporary age, the focus has shifted to the will to transform, leaving the question of truth aside. In the total mobilization (see Blok, 2017a: p. 10-11) of the neoliberal techno-capitalism, the term *truth* is something used with the prefix *post*.

The main emphasis of the present epoch has been on the accumulation of wealth by means of advancing techno-science. All human activity, including scientific enterprise, which used to be about understanding truth, must legitimize its existence in relation to applicability and relevance to technological progress and economic growth. Affluence, in fact, has been accumulated at a rate that arguably no other system would have been capable of sustaining. However, like capitalism and technology, the will to transform is something that both has different degrees and is also contingent on cultural and biological patterns. That is, some human cultures have (had) a more insatiable determination to constantly alter and rearrange things than others[11]. Techno-capitalism (see Suarez-Villa, 2000; 2009) is perhaps the most obvious example of the strong will to transform, where no being escapes this human drive, and where values, practices, and structures are made to support the will to make a change happen. The economic discourse that builds on the

[11] The assumption is that while there are differences in human cultures, all human cultures have the will to transform to some extent. Owing to its conceptual nature, the article cannot provide an empirical account of the factors that determine the extent of the will to transform. What can be noted based on the work of geographers, anthropologists, and sociologists is that different explanations apply to different contexts. The position of the present article on this question is that the degree of the will to transform, as well as change in general, is dependent on (at least) a bundle of different agential characteristics, social practices and structures, defined by both cultural (human) and environmental (not limited to human) factors.

assumptions of consumer power to make transformative changes and the notion of the entrepreneur as a superman, vividly illustrate the will.

Similarly, with Nietzsche's will to power, it is difficult, if not impossible, to trace the will, or lack of it, to a historical point in time or place. Therefore, the roots of the destructive growth machine can be considered to run as deep as those of humankind itself. But even if the will can be seen as a central aspect characterizing the human species, the intention is not to reduce the human condition to this will to transform, but to question the origins of the real-life existential problem related to the ongoing mass extinction of life. It can, nevertheless, be said in the light of history that some individuals have not developed the pathological versions of the will and that some cultures have not supported the progress of the will, as much as others have. And perhaps this is where 'hope' can be found in these dark times; for there are circumstances under which humans are able to let go of, as well as to resist, the will to transform. But to envisage an alternative mode of being, the analysis must be steered towards a more personal stage (even if one that is not necessarily individualistic), where the responsibility of actors is called into question. Owing to the ontological will to power and to transform that underlie the techno-capitalist system, the matter-energetic metabolism of societies will not change unless there are changes in the ways being itself is understood, which is consequently accompanied by a shift in beings' thinking and activities. As already indicated by Nietzsche, the liberal economy is embedded in the ontology of the will to power, to which this article adds the will to transform. Therefore, to have radical change, one must also pay attention to the substitute ontological register of experience.

Releasement as an alternative

In his later work, Heidegger realized the need to move away from (or beyond) the will. For Heidegger, 'the will itself is the main barrier for the experience

of “being” (Blok, 2017a: p. 82). According to Arendt ([1971] 1978: p. 178), Heidegger considered this, as he witnessed the destructiveness of the will, which ‘manifests itself in the Will’s obsession with the future, which forces men [i.e. humans] into *oblivion’*. The will can thus be considered to be deep discontent with the present, which helps us to explain the emergence of this insatiable drive to transform and constantly alter the order of things in the world. Heidegger furthermore assumed ‘the will to rule and to dominate is a kind of original sin, of which he found himself guilty when he tried to come to terms with his brief past in the Nazi movement’ (Arendt, [1971] 1978: p. 173). So, in his later work, he makes an effort to repudiate this will in its entirety, and becomes willing not to will. Heidegger describes this as follows: ‘Non-willing means […] willingly to renounce willing. And the term non-willing means, further, what remains absolutely outside any kind of will’ (Heidegger, [1959] 1966: p. 60).

The term that Heidegger used to describe a way to repudiate the will was ‘releasement’, or ‘letting-be’, or ‘letting-go’ (*Gelassenheit)*. ‘The mood pervading the letting-be of though is the opposite of the mood of purposiveness in willing’ (Arendt, [1971] 1978: p. 178). Having borrowed the term from a mystic, Meister Eckhart, Heidegger's releasement offers a break from the will, which is characterized by calculative thinking, and as an activity, this letting-be ‘is thinking that obeys the call of Being’ (Arendt, ([1971] 1978: p. 178). ‘This letting-go means that we keep ourselves awake for releasement which, on the other side, means that we open ourselves to something, a “mystery “ that [...] is actually be-ing itself, and is that which lets us in into Gelassenheit’ (Dalle Pezze, 2006: p. 1). That is, ‘we may release, or at least prepare to release, ourselves to the sought-for essence of a thinking that is not a willing’ (Heidegger, [1959] 1966: p. 59-60). Hence, releasement ‘is both the end and the required means for twisting free of the will; this is the aporia of the transition to non-willing’ (Davis, 2007: p. 207). It is about moving away from the representational towards ‘eco-poetic relations, intermediated via a presencing, atmospheric sensitivity and

dwelling in proto-contemplative tunings and mindful practices' (Küpers, 2016: p. 1443).

Becoming releasers

Following Heidegger's concept of releasement, people and cultures that have left being as 'will to transform,' can be referred to as *releasers*. In other words, releasers are practitioners of letting-be, as they allow beings to unfold their complex genesis rather than considering them a standing reserve to be transformed for anthropocentric, human purposes (such as economic growth). In relation to the will to transform, releasers are those individuals and collectives who are already moving from more will to transform to less will to transform. Their being has undergone a metamorphosis. In ontic terms, this kind of turning in being manifests importantly in decreased matter-energy throughput, or lower levels of consumption, distribution, and production, as beings are not transformed but left untouched (Heikkurinen, 2018). That is, owing to the lack of enacted will to transform, a decreasing amount of matter-energy is involved in human activities. Importantly for the degrowth movement, what follows is less extraction of nature, less production and use of goods and services, and also less disposal and waste. On the aggregate level, the consequence is that the metamorphosis of beings causes the metabolic flow of human societies to slow as less matter-energy travels through human hands and tools. And it is exactly because of this desired matter-energetic outcome of releasement, that those who are releasing cannot be considered to equally contribute to the Anthropocene problem. It is their transforming co-humans (*transformers)* that cause the metabolic acceleration and thus, further destruction of the non-human world[12].

[12] While affluent areas and regions (in terms of GDP) have more transformers than the deprived ones, transformers are not limited to any particular spatial location, race, class, or religion. In addition to spending, incomes could be considered to indicate persons' and households' will to transform. This of course is limited to techno-capitalist societies, in which monetary rewards are measured in relation to those actions that most effectively contribute to profit, competitiveness, and economic growth.

This distinction between releasers and transformers is important in assigning blame and distributing responsibility, as well in imagining a proper response to resisting the destruction of growth, which at its simplest, means bringing transformations to a halt by means of non-willing. From the point of view of reducing matter-energy throughput, whether a person or a collective stops transforming by choice or by force, does not make a great deal of difference because the direct outcomes are similar whether people reduce throughput because they do not have access to the required resources or because they choose to do so for deliberate and sophisticated reasons. However, with an extended time horizon, the will comes into play; for instance, if the required resources are made available to a person who has not possessed them before and who has the will to transform, it is then likely that he or she will make use of those acquired means. Therefore, the ontological metamorphosis, which includes releasement, is indispensable for the degrowth movement seeking to make societies stop short of transgressing the ecological limits.

To illustrate this point further: there might be a person who does not currently possess the mental and monetary and other reserves needed to make transformations happen, but as he or she gets 'well' (in the frame of progress), the will to transform can be expected to return. However, if that person has intentionally released or 'willingly renounces willing', in the words of Heidegger, the change is arguably more permanent in ontic terms. Thus, despite the desired ecological outcome of his or her sickness, which is reduced matter-energy use, which in the case of suicide would be close to zero, he or she would not necessarily qualify as a releaser. As mentioned above, Heidegger refers to releasement as 'wanting un-willing'. To further quote Heidegger on this subject: 'You want a non-willing in the sense of a renouncing of willing, so that through this we may release, or at least prepare to release ourselves, to the sought-for essence of a thinking that is not a willing' ([1959] 1966: p. 60). But such a metamorphosis requires a call of being to which human beings can have the possibility. '[O]n our own we do not awaken releasement in ourselves' (Heidegger, [1959] 1966: p. 61). That

is, the shift from being a transformer to become a releaser is not something than can be forced and is beyond mere human agency. And as Heidegger notes, we should be calm about it (*gelassen*) precisely because we cannot enforce a call but have to wait for such a call of being.

The question arises as to what extent individuals and collectives, such as the degrowth movement, can really get rid of the will and undergo a metamorphosis in being. Perhaps Heidegger was too aggressive when he sought to completely eliminate the will and also too absolutist with his statements about human agency, or lack of it. After all, as Blok (2017b: p. 33) notes: 'This self or identity of the one who wills is not autonomous or free in the strict sense of the word, as is confirmed by scientific research, but interconnected and interdependent with that which is willed in willing'. The task, therefore, must be a collective one, if anything. In addition, any kind of determinism is not a sound position in relation to the practice of releasement. For example, Heidegger's ([1976] 1981: p. 57) famous statement: 'Only a god can save us', does not reflect a meaningful take on human agency, but a rather one-dimensional view that could not accommodate the degrowth movement. While pessimism about the future and the present condition of humans is acceptable, the practice of releasement cannot be based on an extreme of assuming free will or determinism. In other words, there must a degree of agency or autonomy that can be directed to independent thought and action, even if only in relative terms (Heikkurinen et al., 2016; Heikkurinen, 2017). The nature of being 'does not imply that the act of willing is fully determined by that which is willed' (Blok, 2017: p. 33). What this signifies for the practice of releasement is that it is neither fully possible, nor fully out of reach. How much it can actually be reached, 'the degree [of agency], depends on the external (e.g. physical objects or cultural norms) as well as on the internal (e.g. mental models or self-imposed duties) restrictions' (Heikkurinen, 2017: p. 459).

Waiting and preparing

The current article has to this point argued that the ontological human will to transform, manifests ontically in the transformation of nature to human objects. Consequently, the will is a focal problem underlying growth societies, which has led the Earth to the Anthropocene. Each act of transformation requires natural resources, and the utilized matter-energy input problematically increases waste in the ecosphere, or entropy, in the parlance of thermodynamics. This being so, a proper response to the call for transformations would involve following the example of releasers, who allow being to unfold without constant anthropogenic intervention. That is to say, rather than running after the ontical transformations in the social, a metamorphosis in being is invited to complement the understanding of when and where not to intervene in the entities and processes of nature.

If the current analysis is correct, then releasers (who have already absorbed a degree of releasement) can be the harbingers of hope for the degrowth movement; and perhaps even more that just hope, as they are already living the metamorphosis through practising releasement. But an important question remains: how can transformers become open to the experience of releasement? Davis (2007: p. 221) is worth quoting here at length:

> The "house of being" modern [hu]man inhibits is constructed within the domain of the metaphysics of will. Yet it is not possible to simple vacate the premises overnight and take up lodging elsewhere. To enter into genuine dialogue with non-Western languages or to learn to speak in new ways requires going *through* the hallways and clearing the portals of our current domicile. Hence, if we are to open a window onto another vista, indeed if we are to build a pathway for transporting and rebuilding our house in a region beyond the domain of the metaphysics of the will, we must begin by learning to use the furnishings available in this house otherwise.

It follows that while the metamorphosis from transformers to releasers is of crucial importance, it cannot be rushed. The roots of the will to transform run deep and the contemporary mode of being is very pervasive. According to Heidegger, 'we are to do nothing but wait' [*warten*] ([1959] 1966: p. 62). He notes that we can get close to being released through waiting, '[…] but never awaiting, for awaiting already links itself with re-presenting and what is re-presented' (ibid: p. 68). Dalle Pezze (1998b: p. 240-241) remarks that '"waiting" is the key experience, for when waiting we are in the position of crossing from thinking as representing to thinking as meditative thinking. By waiting, we move from that thinking which, as Heidegger states, has lost its "element" (be-ing) and dried up, to the thinking that is "appropriated" by its "element" (be-ing itself) and which, therefore, has turned towards be-ing itself'. Therefore, turning to releasing may unfold through waiting without expecting, so to speak; or as Heidegger puts it, 'In waiting we leave open what we are waiting for' (Heidegger, [1959] 1966: p. 68). And this kind of waiting is already releasement (Davis, 2007).

But perhaps Heidegger is again too strict about proposing to merely wait. After all, closeness to being cannot be reduced to a single task or practice, an observation that applies to the degrowth movement as well. Therefore, in addition to waiting, humans can do other things with a low matter-energy throughput, such as dance and meeting their primary needs, but in parallel, they might begin preparing for the expected that has already shown itself to many. Owing to the rigid path dependencies in the current techno-capitalist system, peak oil, and the political disinterest in curbing economic growth and over-consumption, a foreseen future is the collapse of the human civilisation (e.g. Tainter, 1990; Duncan, 1993; Tomlinson et al., 2013). As Evans (2005: p. 1) phrases it: 'We would be foolish to take for granted the permanence of our fragile global civilisation'.

Alongside the preparations for collapse, there are some practical implications that are linked to releasement. Zimmerman (1994: p. 132) explains these as

follows: ‘First, it means not unduly interfering with things. Second, it means taking care of things, in the sense of making it possible for them to fulfill their potential. Third, letting-be involves not just the ontical work of tending to things, but also the ontological work of keeping open the clearing through which they can appear’. The people living in increasingly popular ecovillages and in transition towns seek to interfere in the non-human processes mainly to fulfil their primary needs for food and shelter (LeVasseur and Warren, 2019). This phenomenon of voluntary simplicity is of course not limited to rural or semi-urban environments but is also apparent in urban settings. These practitioners’ ‘essential reasoning here is that legal, political and economic structures will never reflect a post-growth ethics of macro-economic sufficiency until a post-consumerist ethics of micro-economic sufficiency is embraced and mainstreamed at the cultural level’ (Alexander, 2013: p. 287).

Turning to Paxcene?

The ‘great turning around’ that Heidegger refers to has already begun, but it might only gain momentum as the collapse proceeds. In his book *Heidegger and the Environment*, Rentmeester (2016: p. 61) notes that ‘Heidegger often calls this great turning around a “new beginning” or the “other beginning” in that it will incite a change in the human relationship with being’. ‘This new beginning is a radical departure from the previous epochs, though it somehow has a relation to the first beginning’ (2016, p. 62). The turning, however, is not merely human induced, but also involves forces beyond the merely human (cf. Bannon, 2014). Perhaps the on-going collapse will take the Earth to the next geological epoch, which will hopefully be characterized by peaceful coexistence between humans and the rest of nature. This imaginary epoch could be optimistically labelled the ‘Paxcene’ (pax from Latin denoting peace). Without modern technology and the growth of the global capital flow, the Paxcene is likely to region, funnel people where food and shelter are available. The purpose here is not to argue for a romantic, pre-industrial nature that humans could go back to, but rather direct some thought to the

post-industrial era that will follow the peak of the collapse, which may—as beautifully phrased by Barbara Dalle Pezze—that which regions [*Gegnet*] '[…] creates, or perhaps reveals, a space/time, an expanse in which things themselves also do not have the character of objects anymore. They lose their nature of means and return to their nature of being as tree, stone, flower. They return to that moment that seems to be the absence of time—in the sense of sequence of moments—and emerges as time-space within which they simply are and rest'.

A way to understand this metamorphosis is in terms of the emergence of a new understanding or mode of being, that is, who we humans are (see Brown and Toadvine, 2012; Bannon, 2014). It is perhaps something similar to that which happens when leaving Plato's cave or the caterpillar turns into a butterfly: It is a *metamorphosis in being*. It is not only a kind of Marxist emancipatory project for the worker or even the classic environmentalist task of saving the world, but consciousness unfolding in conjunction with those who wait and reflect. In a Heideggerian sense ([1952-1962] 1977), reflection is not just making oneself conscious of something and different from scientific or intellectual knowing. It is more. 'It is calm, self-possessed surrender to that which is worthy questioning' ([1952-1962] 1977: p. 180). Moreover, 'Reflection is needed as a responding that forgets itself in the clarity of ceaseless questioning away at the inexhaustibleness of That which is worthy of questioning—of That from out of which, in the moment properly its own, responding loses the character of questioning and becomes simply saying.' (Heidegger, [1952-1962] 1977: p. 182). This kind of Heideggerian ([1936-1944] 2006) mindfulness (*besinnung*) could be a path leading out of the Anthropocene[13].

[13] Even if the article calls for reflection on being, explanations of the current ecospherical crisis through economic relations and imbalances of power, as well as conventional calls for political change without an ontological rift, are neither waste of personal time nor unimportant for the degrowth movement. For example, geographies of degrowth in an ontic sense, such as outlining strategies for radical reconfigurations of state-society relationships (see Akbulut, in this issue) are considered complementary perspectives to the mainly ontological analysis performed in this study.

From the ontic point of view of reducing matter-energy in a complex world, things are relatively simple: those who transform the most are the biggest offenders and the chief part of the problem. In the light of natural sciences, and laws of thermodynamics in particular, this assertion (even if it is reductionist) is difficult to reject; but *being* certainly does not reduce to the ontic need to reduce matter-energy throughput. In other words, the world is not merely about any binary or continuum, such as releasers versus transformers or the good versus evil, even if it is about binaries too. In fact, claiming such dualism would neither do justice for the present argument, nor (and more importantly) to the issues at stake in the Anthropocene.

Furthermore, for the geographies of degrowth, sensitivity to 'place' is of crucial importance. Consequently, in the theoretical nexus of these two fields of study (namely degrowth and geography), 'place' does not reduce to a phenomenon disclosing in personal, regional, national and global spaces, but also encompasses earthbound geographies, where the planet and the human condition are investigated in relation to degrowth (see Georgescu-Roegen, 1975). That is, in addition to a variety of multilevel contexts on the planet, also 'the Earth' is a place of relevance, belonging and culture. This place, where nature unfolds as a whole, is located in the space of cosmos (see Boulding, 1966). The main contribution of the present analysis to 'geographies of degrowth' is hence the following. By providing a conceptual analysis of the human will, the study proposes that: albeit place sensitivity is vital to effectively reducing matter-energy throughput (as most of the production is for the wants of the global northerners), the problem of disturbed metabolic flow on Earth cannot be reduced to any single cultural and empirical context. Thus, onto-spatial analyses of actors (as well as their relations and actions) bound up in the geography of the planet, in contrast to merely examining sub-planetary societies (e.g. nation states or particular regions), complements the geographies of degrowth.

The will to transform, however, is also shaped by contextual factors such as race, class, ethnicity, gender (see Collard et al., 2018), and its manifestations are contingent on access to different forms of resources, e.g. economic, social, and cultural capital (see Bourdieu, 1986), as well as influenced by the availability of natural capitals (see Daly, 1996). The enactment of the will to transform can be supported and corrupted by power relations and exposure to ideologies of growth, such as capitalism (see Scott, 1998). As the empirical analysis on which of the social factors determine the degree of the will to transform was outside the scope of this article, this is an important next step. What is already known from previous studies is that the high consuming societies and individuals are the biggest burden on the environment due to their high matter-energy demand. The will to transform, however, is not limited to any particular income class (like the top 5% or 0,05%) even if the richest ones are doing most of the ecospherical damage (see Ulvila and Wilén, 2017). Therefore, perhaps the most central issue for future studies (from a degrowth point of view) is to empirically examine how certain communities and individuals have denounced the will, and how this could be introduced in the over-consuming societies. Furthermore, by conceptualizing the will to transform, the present article calls further studies to move beyond the dichotomy of 'the good' (often 'us') and 'the evil' (often 'them') to investigate the different degrees of the *will* to transform. And, in addition to examining others' (e.g. capitalists') will to transform, the study invites everyone to reflect on their will to power and transform (as well as the consequences) in the context at issue. Empirical analysis on the will to transform could hence also include auto-ethnographic studies and auto-phenomenography as fruitful ways forward in the quest of understanding 'being degrowth' and 'degrowth being' it its diversity, that is, degrowth as modes of being.

Conclusion

This article has examined the transformation discourse, and problematized the underlying, insatiable will to transform. Albeit the human will to transform is understandable as the ecospherical crisis is mounting and change of great magnitude is certainly needed, the article claims that the will does not offer an adequate base for leading a way out the growth contraption. Consequently, the article has attempted to shed light upon how this change is to come about. The article has argued that paradoxically the acts arising from the will to transform exacerbate the crisis, as societies are embedded in nature. That is, all human action requires matter-energy, which increases the throughput and hence does not contribute to the minimum requirement of the degrowth movement, which is reduction of the matter-energy throughput. It is thus argued that the anthropogenic, human-made transformations of the social can become counterproductive for the aspirations of degrowth. Furthermore, the degrowth movement should be wary of arguments, which claim that indirect contributions reduce throughput, as they can be used to legitimize further growth.

The current article suggests that to arrive at a response to the ecospherical crisis, transformers must become aware of their innate drive to constantly change the affairs in the world, and the matter-energetic consequences of that drive. An ontic analysis complemented by a context specific ontological one could foster such awareness. For degrowth, this means an exploration of a degrowth ontology in different settings. This article conceptualized the indispensable ontological changes as a *metamorphosis* in being. The m-term was chosen to denote that the changes required are not merely a question of human agency but also of nature. That is, an ontological shift (to releasement) cannot be achieved by increasing action or intellectual knowledge. To distinguish such an ontological shift from the ontic, the article refers to a metamorphosis that fundamentally changes not only the identity and actions of humans, but those of being itself. For the metamorphosis to happen requires the close interplay of the human and nature as a whole. Hence, degrowth practitioners are encouraged to wait, not just act and try to make an

ever-bigger impact on the world, and prepare for the post-collapse Paxcene epoch, where the world will unfold differently. The practice of releasement, where meditative thinking and reflection reside, is here suggested to be an approach worth exploring to counter the destructive will to transform.

References

Abram, D (1996) *The Spell of the Sensuous*. Vintage Books: New York.

Abson, D. J., Fischer, J., Leventon, J., Newig, J., Schomerus, T., Vilsmaier, U., ... & Lang,D. J (2017) Leverage points for sustainability transformation. *Ambio* 46(1): 30-39

Alcott, B (2005)Jevons' paradox. *Ecological Economics* 54(1): 9-21.

Alexander, S (2013) Voluntary simplicity and the social reconstruction of law: Degrowth from the grassroots up. *Environmental Values*22(2): 287-308.

Arendt, H([1971] 1978) *The life of the mind*. A Harvest Book: London.

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

Atkisson, A (2012) *The sustainability transformation: How to accelerate positive change in challenging times*. Routledge: Oxon and New York.

Aydin, C (2007) Nietzsche on Reality as Will to Power: Toward an" Organization–Struggle" Model. *The Journal of Nietzsche Studies* 33(1): pp.25-48.

Bannon, B. E (2014) *From mastery to mystery: A phenomenological foundation for an environmental ethic*. Ohio University Press: Ohio.

Baykan, B. G (2007) From limits to growth to degrowth within French green politics. *Environmental Politics* 16(3): 513-517.

Blok, V (2011) Establishing the Truth: Heidegger's Reflections on Gestalt. *Heidegger Studies* 27:101-118.

Blok, V (2012) Naming Being-Or the Philosophical Content of Heidegger's National Socialism. *Heidegger Studies*, 28: 101-122.

Blok, V (2017a) *Ernst Jünger's Philosophy of Technology: Heidegger and the Poetics of the Anthropocene*. Routledge: New York and London.

Blok, V (2017b) Contesting the Will: Phenomenological Reflections on Four Structural Moments in the Concept of Willing. *Journal of the British Society for Phenomenology* 49 (1): 18-35

Bonaiuti, M (ed.) 2011 *From Bioeconomics to Degrowth*. Routledge: London/New York.

Bonnedahl, K. J., Heikkurinen, P (eds.) (2019) *Strongly Sustainable Societies: Organising Human Activities on a Hot and Full Earth*. Routledge: London and New York.

Boulding, K. E (1966) The economics of the coming spaceship earth. In Jarrett, H. (ed.), *Environmental Quality in a Growing Economy*. Johns Hopkins University Press: London, pp. 3-14.

Bourdieu, P. (1986). The Forms of Capital. In Richardson, J. E. (ed.), *Handbook of Theory of Research for the Sociology of Education*. Greenword Press, pp. 241-58. Translated by Nice, R.

Brand, U (2016) "Transformation" as a New Critical Orthodoxy: The Strategic Use of the Term "Transformation" Does Not Prevent Multiple Crises. *GAIA-Ecological Perspectives for Science and Society*25(1): 23-27.

Brown, C. S., Toadvine, T (eds.) (2012). *Eco-phenomenology: Back to the earth itself*. SUNY Press: New York.

Brown, K., O'Neill, S., & Fabricius, C (2013) Social science understandings of transformation. World Social Science Report 2013: Changing Global Environments, pp. 100-106.

Collard, R. C., Harris, L. M., Heynen, N., Mehta, L (2018) The antinomies of nature and space. *Environment and Planning E*, 1(1-2): 3-24.

Cosme, I., Santos, R., O'Neill, D. W (2017) Assessing the degrowth discourse: A review and analysis of academic degrowth policy proposals. *Journal of Cleaner Production* 149: 321-334.

D'Alisa, G., Demaria, F., Kallis, G (eds.) (2015) *Degrowth: a Vocabulary for a New Era*. Routledge: Oxon.

Dahlstrom D. O (2013) *The Heidegger Dictionary*. Bloomsbury: London and New York.

Dalle Pezze, B (2006) Heidegger on Gelassenheit. *Minerva-An Internet Journal of Philosophy* 10:94-122.

Daly, H (1990) Sustainable Development: An Impossibility Theorem. *Development*3/4: 45-47.

Daly, H. E (1996) *Beyond growth: the economics of sustainable development*. Beacon Press: Boston.

Davis, B. W (2007) *Heidegger and the Will: On the Way to Gelassenheit*. Northwestern University Press: Illinois.

Demaria, F., Schneider, F., Sekulova, F., & Martinez-Alier, J (2013) What is degrowth? From an activist slogan to a social movement. *Environmental Values* 22(2): 191-215.

Ehrenfeld, D (1978) *The Arrogance of Humanism*. New York: Oxford University Press.

EU (2017), Sustainability and circular economy. Available at: https://ec.europa.eu/growth/industry/sustainability_en

Evans, D (2005) 'A risk of total collapse: We would be foolish to take for granted the permanence of our fragile global civilisation'. *The Guardian*, 21 December.

Foster, J. B (2011) Capitalism and Degrowth-An Impossibility Theorem. *Monthly Review* 62(8): 26.

Geels, F. W (2018) Disruption and low-carbon system transformation: Progress and new challenges in socio-technical transitions research and the Multi-Level Perspective. *Energy Research & Social Science* 37: 224-231

Georgescu-Roegen, N ([1970] 2011) The Entropy Law and the Economic Problem. In Bonaiuti, M. (ed.) *From Bioeconomics to Degrowth*. Routledge: London and New York.

Georgescu-Roegen, N (1975) Energy and economic myths. *Southern Economic Journal* 41(3): 347-381.

Gorz, A ([1975] 1980) *Ecology as politics*. Boston: South End Press.

Hamilton, C (2013) *Earthmasters: The Dawn of the Age of Climate Engineering*. Yale University Press: Yale.

Hamilton, C (2016) The theodicy of the "Good Anthropocene". *Environmental Humanities* 7(1): 233-238.

Heidegger M ([1938-1939] 2006) *Mindfullness. Translated by Parvis Emad and Thomas Kalary*. Continuum: London and New York.

Heidegger, M ([1959] 1966) *Discourse on thinking*. Harper and Row: New York.

Heidegger, M., ([1927] 2012) *Being and Time* [Sein und Zeit]. Translation by Macqarrie, J., Robinson, E., Blackwell Publishing, Malden.

Heidegger, M., [1952-1962] 1977 *The Question Concerning Technology and Other Essays*. Translation by Lovitt, W., Garland Publishing, New York.

Heikkurinen, P. (2018) Degrowth by means of technology? A treatise for an ethos of releasement. *Journal of Cleaner Production* 197: 1654-1665.

Heikkurinen, P (2017) The relevance of von Wright's humanism to contemporary ecological thought. *Acta Philosophica Fennica* 93: 449-463.

Heikkurinen, P (ed.) (2017) *Sustainability and Peaceful Coexistence for the Anthropocene*. Routledge: London and New York.

Heikkurinen, P., Rinkinen, J., Järvensivu, T., Wilén, K., & Ruuska, T (2016) Organising in the Anthropocene: an ontological outline for ecocentric theorising. *Journal of Cleaner Production* 113: 705-714.

Holland, A (1997) Substitutability: Or, why strong sustainability is weak and aburdly strong sustainability is not absurd. In: Foster, J. (ed.), *Valuing Nature? Ethics, Economics and the Environment*, pp. 119–134. Routledge: London.

Kallis, G (2011) In defence of degrowth. *Ecological Economics* 70(5): 873-880.

Kallis, G., Kerschner, C. and Martinez-Alier, J (2012) The economics of degrowth. *Ecological Economics* 84: 172-180.

Kemp, R (1994) Technology and the transition to environmental sustainability: the problem of technological regime shifts. *Futures* 26(10): 1023-1046.

Kerschner, C (2010) Economic de-growth vs. steady-state economy. *Journal of cleaner production* 18(6): 544-551.

Küpers, W (2016) Phenomenology of embodied and artful design for creative and sustainable inter-practicing in organisations. *Journal of Cleaner Production*135:1436-1445.

Latouche, S ([2007] 2009) *Farewell to Growth*. Polity Press, Cambridge.

Lazzarato, M (2015) Neoliberalism, the Financial Crisis and the End of the Liberal State. *Theory, Culture & Society* 32(7-8): 67-83.

LeVasseur, T. and Warren, L (2019) Redesigning community as an ecovillage: lessons from Earthaven. In Bonnedahl, K. and Heikkurinen, P. (eds.) *Strongly Sustainable Societies: Organising human activities on a hot and full Earth*. Routledge: London.

Li, T. M (2007) *The will to improve: Governmentality, development, and the practice of politics.* Duke University Press: Durham, NC.

Lorek, S., Spangenberg, J. H (2014) Sustainable consumption within a sustainable economy–beyond green growth and green economies. *Journal of Cleaner Production* 63: 33-44.

Martínez-Alier, J (2009) Socially Sustainable De-growth. *Development and Change* 40 (6): 1099–1119.

Martínez-Alier, J., Pascual, U., Vivien, F. D., & Zaccai, E (2010) Sustainable de-growth: Mapping the context, criticisms and future prospects of an emergent paradigm. *Ecological economics* 69(9): 1741-1747.

Max-Neef, M (1991) *Human Scale Development: conception, application and further reflections*. The Apex Press: New York, NY.

Nietzsche, F ([1882] 2001) *The Gay Science*. Edited by Bernard Williams. Cambridge University Press: Cambridge.

Nietzsche, F ([1883-1888] 1968) *The Will to Power*. Translated by Walter Kaufmann and R. J. Hollingdale. Random House: New York.

Nietzsche, F ([1883-1891] 1997) *Thus Spake Zarathustra*. Wordsworth: London.

Pauly, D (2014) Homo sapiens: cancer or parasite?. Ethics in Science and *Environmental Politics* 14(1): 7-10.

Polanyi, K ([1994] 2001) *The Great Transformation*. Beacon Press: Boston.

Rentmeester, C (2016) *Heidegger and the Environment*. Rowman & Littlefield: London.

Samerski, S (2018) Tools for degrowth? Ivan Illich's critique of technology revisited. *Journal of Cleaner Production* 197: 1637-1646.

Scott, J. C (1998) *Seeing like a state: How certain schemes to improve the human condition have failed*. Yale University Press: Yale.

Sekulova, F., Kallis, G., Rodríguez-Labajos, B., & Schneider, F (2013) Degrowth: from theory to practice. *Journal of Cleaner Production* 38: 1-6.

Smith, A., Stirling, A., & Berkhout, F (2005)The governance of sustainable socio-technical transitions. *Research Policy* 34(10): 1491-1510.

Suarez-Villa, L (2000) *Invention and the Rise of Technocapitalism*. Rowman & Littlefield: Lanham, MD.

Suarez-Villa, L (2009) *Technocapitalism: A critical perspective on technological innovation and corporatism*. Temple University Press: Philadelphia, PA.

Tainter, J. A (1990) *The Collapse of Complex Societies*. Cambridge University Press: Cambridge.

Tomlinson, B., Blevis, E., Nardi, B., Patterson, D. J., Silberman, M., & Pan, Y (2013) Collapse informatics and practice: Theory, method, and design. *ACM Transactions on Computer-Human Interaction* (TOCHI)20(4): 24.

Ulvila, M. & Wilén, K (2017) Engaging with the Plutocene: moving towards degrowth and postcapitalist futures. In Heikkurinen, P. (ed.) *Sustainability and Peaceful Coexistence for the Anthropocene*. Routledge: New York and London.

UN (2016). UN urges action on sustainable development to create pathways for global 'transformation'. Available at http://www.un.org/sustainabledevelopment/blog/2016/04/un-urges-action-on-sustainable-development-to-create-pathways-for-global-transformation/

Von Wright, G. H (1987) *Tiede ja ihmisjärki – Suunnitusyritys*. Translated by A. Leikola. Otava: Helsinki.

Whitehead, A. N ([1920] 1964) *The Concept of Nature*. Cambridge University Press: Cambridge.

Wright, E. O (2013) Transforming capitalism through real utopias. *American Sociological Review* 78(1): 1-25.

Zimmerman, M. E (1994) *Contesting earth's future: Radical ecology and postmodernity*. University of California Press: Berkley.

Žižek, S (2012) Don't Act. Just Think. Published on August 28. Available at https://www.youtube.com/watch?v=IgR6uaVqWsQ.

Acknowledgements

I want to thank Karen Bakker, Federico Demaria, and Georgios Kallis for organising the 'Geographies of Degrowth' special issue and session at the AAG Annual Meeting 2017 in Boston. I also wish to express my gratitude to the journal editor Prof. Lyla Mehta for her encouragement and guidance, and of course, also extend my thanks to the three excellent reviewers of manuscript. In addition, I am truly indebted to my colleagues, and in particular to Vincent Blok and Toni Ruuska, for their support and feedback during the writing process. This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Sklodowska-Curie grant agreement No 707652.