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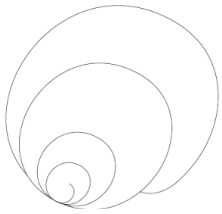

RESEARCH ARTICLE

Depowering Growth: What can degrowth learn from insurgent energy movements?

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Abstract
There exists in the current degrowth literature a fairly widespread understanding that the core mechanism of capitalism entails extractivist, productivist, and accumulatory drives, and is thus incompatible with degrowth. It is important now to build on that understanding and develop a deeper and more nuanced analysis of the specificities of that mechanism and, critically, to interrogate the underlying social relationships so that we can effectively evaluate and critique proposed degrowth pathways, particularly with regard to their interaction with the dynamics of social power. Only once we understand these relationships and the systemic incentives they create can we begin to develop grounded strategies for achieving a societal trajectory of just and equitable degrowth. To that end, this paper has three components. First, I present an anarchist analysis of the growth imperative and its connections to capitalism, the state, and hierarchical forms of social organization. Building on this analysis, I then argue for the necessity of non-state and anarchic approaches to degrowth. Secondly, in order to begin to concretize this analysis, I draw on existing research, as well as my own experience as an energy justice and energy democracy organizer, to put forward a hypothesis of how and why a transition to anarchic energy formations could serve as an effective impetus for broader systemic degrowth. Finally, using this hypothesis as a jumping-off point, I highlight several critical research questions and attempt to tie them into a more cohesive research agenda.

1. Introduction

The concept of degrowth and related frameworks for economies centered around ecological and social wellbeing have become increasingly popular over the last several years, particularly in European academic and activism contexts, despite an abundance of push-back. There is a reason for this: the 'why' of degrowth—and specifically the consequences of a generically growth-centric approach to socioeconomic organisation—has been well established, through

both traditional academic research and the analysis of other knowledge systems (and often a combination thereof). There is extensive literature on the various biophysical planetary boundaries (Dearing et al., 2014) and the ways in which human societal metabolism is, or will soon be, transgressing these boundaries (Richardson et al., 2023) based on solid empirical evidence. While there is a need for nuance within these framings—for example, a total measure of all of human society's metabolic throughput does not capture the distribution and cause of various components of that metabolism, and so can be misleading and/or depoliticising—the overall argument seems to be increasingly popular.

The 'what' is also well represented—there is no shortage of degrowth and post-growth visions represented in the literature (Kallis et al., 2022), alongside research putting forth models with concrete descriptions of what economic sectors need to be reduced and to what degree. These suggestions are complemented by ideas of what parts of overall human society—again, a flat framing—may expand, with a particular emphasis on care work (Dengler & Lang, 2022). One question of note in this context is that of *where* these degrowth imaginaries envision these changes taking place. In general, as Miriam Lang (2024) discusses, degrowth is seen as a necessary process for the global North in particular, in part because this is necessary, given a very universalistic calculus, for the South to grow in the ways it needs to. This vision sometimes falls in line with a developmentalist ideal that sees some part of the global North's past growth and development as not only acceptable, but to an extent something for the South to mimic, at least up to a point. This is not a universal theme in the degrowth literature, but it is something to be aware of, lest we fall into reductive quantitative evaluations of (de)growth. Degrowth cannot just be a method for balancing an equation, and must instead point to a set of principles that apply everywhere in context-sensitive ways; a pluriversal ontology.

The 'how' of degrowth, on the other hand, would benefit from the application of some additional—currently under-represented—analytical lenses, particularly with regard to political analysis. As of right now, much of the degrowth literature that aims to propose mechanisms for degrowth does so through the framework of policy change. The solutions are (typically) actions state institutions could take in order to facilitate degrowth, such as limiting work hours (Levy, 2017), ensuring the right to repair and reuse (Lloveras et al., 2024),

implementing income and wealth caps (Buch-Hansen & Koch, 2019), etc. It is worth interrogating that framework, primarily by problematising the state's role, and in particular, asking if the basic nature and function of states might act as a structural obstacle to their ability to facilitate degrowth. We should also consider the ways in which a variety of ecological movements, particularly those with a focus on decolonisation, exemplify a radical, insurrectionary degrowth that may not self-label as such, but could still inform concrete degrowth visions.

This paper, then, aims to provide another perspective, specifically an anarchist one, on how degrowth happens (and is already happening), tying together a theoretical understanding of the foundations of growth with examples of real insurgent movements against all the systems that growth springs from, and then applying that perspective to develop a hypothesis of how anarchic social formations, in the context of energy systems, could help facilitate broader degrowth. To that end, I will first establish a theoretical framework, broadly discussing an anarchist analysis of the relationships between growth, capitalism, the state, and hierarchical social arrangements more generally, as well as the connection between energy production and overall metabolic throughput. I will then present a hypothesis of how and why energy systems arranged according to anarchic principles could facilitate degrowth. Finally, based on this theory and hypothesis, I will suggest a few relevant research questions and present a research agenda.

I will clarify a few broader contextual points before going into more depth. Firstly, I want to make known my background and position. To that end, I acknowledge that I am writing from the perspective of a scholar working in the global North, and that that perspective shapes my analysis. I do have significant experience working within social movements on a broad range of socio-political projects with much of that time spent organising around issues of ecological justice and energy democracy/sovereignty from a broadly left and increasingly anarchist point of view, which I will describe in greater detail later in this article. That said, that experience has all been in the global North (specifically in the US and UK), and so my analysis of degrowth is informed by those experiences. Though I have familial and professional connections to the South, I do not claim to speak for movements in the South (or elsewhere, for that matter). While I do believe there are enough systemic similarities across contexts to attempt to learn

from each other and act in solidarity, ultimately the manifestations of capitalism, the state, and other social structures are unique to any given context, as are the relationships of movements to such structures, and so none of this is in any way meant to be a prescriptive blueprint for degrowth. Even as we discuss degrowth, we must understand that what is degrown, and how, is context dependent, and will generally not look the same in colonial contexts as it will in the global North (Nirmal & Rocheleau, 2019).

Second, and relatedly, I want to make a point about my epistemic perspective and how this paper (and the analysis herein) relates to the radical work of *doing* degrowth. To begin with, I want to clarify what I am referring to when I use the term 'pathways', as I typically use that term as a shorthand: I do not mean universalised, engineered, stepwise blueprints that then must be passed down and adopted en masse. Degrowth is *already* happening as part of heterogeneous, organic, and militant movements against growth and the systems that perpetuate it. These cannot be planned, executed, and managed from above and from the center (including from the academy); so by pathways I am referring to these sorts of spontaneous and emergent happenings that may facilitate degrowth, and may be anarchic in nature but are not necessarily explicitly so—they are pathways we are identifying and seeking to understand during or after the fact and are not always simple, linear, and straightforward.

I agree with other scholars in seeing degrowth not as a singular movement that dictates activity, but rather a "movement of movements" (Kallis, 2017), or a "platform for a network of networks beyond one-issue politics" (Kothari et al., 2014), or rather, a *component* of a movement of movements. There is a risk in this perspective of allowing other, distinct ideas and projects to be co-opted and subsumed into degrowth, and there is validity in the point that degrowth is more appropriate as a discrete discourse of transition (Escobar, 2015) than it is a set of fundamental principles of ongoing social organisation. My view is that degrowth (treated as a heterogeneous, contextually-sensitive, and non-prescriptive phenemonon) is an intrinsic and inevitable aspect of a general anarchist social imaginary, which is ultimately the perspective I am most aligned with. Additionally, a movement of movements, articulated from the anarchist perspective, does not place any one movement or ideal above any other; they are interconnected but distinct and autonomous. The point of this article, then, is not to create a rigid plan for degrowth, or even to generalise existing emergent social processes and

movements into a universalised framework, as that would perpetuate the epistemic and ontological positioning that is intertwined intrinsically with the problem. Rather, the aim is to attempt to reconcile scholarly and political theory with existing concrete realities in order to develop an academic perspective that is more in line with, and capable of supporting, a diverse and autonomous degrowth.

2. Theoretical Framing

What is Degrowth?

The concept of degrowth has been thoroughly fleshed out through several decades worth of academic literature (Hickel, 2021; Kallis et al., 2018); at its core, the dominant degrowth literature advocates for the reduction of humanity's social metabolism—the total throughput of material and energy—to a level ecologically sustainable within earth's planetary boundaries and optimised for maximal social wellbeing. It should be noted that this formulation speaks to a general argument but is too broad and generic to be of much use in and of itself without further elaboration, and in that simplicity may inadvertently perpetuate problematic notions.

Firstly, the category of 'humanity' is essentially meaningless, as ecological impacts (and forms of relation) are not monolithic; it is clear that differentiation is required for a useful analysis. Secondly, the way wellbeing is defined in much of the literature is often heavily standardised and economistic; this term too must be addressed as contextually and socially differentiated in order to be deployed appropriately. Finally, it is debatable whether the language of 'limits' is necessary or even useful in articulating the argument for degrowth—this framing can often serve to overstate physical phenomena and understate social ones, serving to depoliticise discourses (Bettini & Karaliotas, 2013). Overall, however, the general thrust of degrowth, and especially a heterogeneous and autonomous degrowth, necessitates substantial social, political, and economic reconfiguration that varies with context. This is a point I will come back to in more depth later, but it is important to understand the degree to which this represents a radical social shift, not just in terms of organisation but also of culture.

It is also worth briefly discussing what degrowth is *not*, as many of its critics frame it in terms that are based in contemporary hegemonic ideas of what the purpose and form of the economy should be and how socio-economic relations should be structured. Degrowth is not, in the most basic sense, austerity or recession. Unlike those concepts, which represent economic crises or governmental responses to those crises, and which only really make sense in a capitalist-statist framework, degrowth is a planned (ideally, a democratically and participatorily planned) reconfiguration of production, which will include reductions in some economic sectors but likely growth in others—particularly less materially-intensive and extractive ones. This may appear as a recession according to capitalist calculations, particularly when GDP is considered the most important measure, but the socio-political nature of a degrowth transition would be vastly different.

Degrowth and Capitalism

Effectively articulating degrowth requires a baseline analysis of growth. Scholars, particularly those within the field of ecological economics, have recently been outlining the contours of a 'growth imperative' that underpins and flows through many facets of contemporary society, particularly in the global North. The capitalist economic system has been identified as inextricable from, and dependent on never-ending (material) growth, which flows from the structural goal for capital accumulation (Blauwhof, 2012). It should be noted that like any social phenomenon, capitalism is uneven and diverse, taking on different characteristics dependending on the social and geographical context it is operating in, but the core defining processes are consistent.

Ultimately, the basic, fundamental mechanism and social relation is universal: a class system in which one class of people—capitalists—enclose commons (including but not limited to typical 'means of production'), hoard them, and extracts rent on their usage, while another class is essentially forced (by circumstance) into selling their labour, with some portion of its value being captured by capitalists. This relationship enables the extraction of value from labour, which can be used to increase capital holdings, and then that increased possession of capital opens the way for greater profit. This effectively forms a self-reinforcing cycle of material accumulation and growth (Sheorey, 2023).

This socio-material dynamic is the fundamental basis of social metabolic growth, but it could not persist without a broader cultural narrative. As Pineault (2020) describes:

> *But Growth is more than the materialization of capitalist accumulation, it is also a powerful idea, a central ideologeme of capitalist society, more precisely a system of meaning through which capitalist society understands its historical trajectory, makes sense of its past, understands its present, and imagines its future.* (p. 2)

The hegemonic dominance of the growth imperative acts to restrict the scope and depth of imaginations for alternative socio-economic arrangements. As Pineault points out, this limitation extends to visions for explicitly anti-capitalist futures. In this context, any proposal for degrowth is *fundamentally radical*, i.e. it challenges root assumptions, and so must embrace radical political and social transformations.

There are a couple of ways in which this hegemonic growth imperative manifests that are of particular interest. First is how it appears in the discourses around the purposes of production (and by extension, extraction, and consumption). Market mechanisms, and more specifically the commodification of ecosystem resources for the production of goods for sale (Bermejo & Bermejo, 2014), constitutes a central pillar of (neoliberal) capitalism that represents a structural obstacle to degrowth. This is because a focus on commodification shifts the purpose of production from a relatively immediate, concrete, and most importantly limited goal of providing for the needs of society, to a more open-ended goal, embodied in a self-perpetuating cycle of profit and capital accumulation that can never be satisfied (Euler, 2019).

Secondly, it shapes the way we evaluate economic and social wellbeing. One of the most ubiquitous metrics by which the strength of an economy is evaluated is the growth of gross domestic product (GDP), which is in essence a measure of the growth of societal metabolism. So profound is this focus on GDP that, despite its flatness as a metric, it is also considered a primary indicator of societal wellbeing—which is an assertion worth investigating. While in some cases, the data does show that there is a correlation between GDP and certain more specific indicators of social health, at least up to a point, it should be asked what specifically is contributing to that increase in wellbeing. Is it some component of GDP? Is it a third factor

that correlates to both GDP and wellbeing? Are there parts of the societal metabolism that do not contribute to wellbeing, or even are detrimental to it? There is significant literature demonstrating that this is not a straightforward one-to-one relationship (Giannetti et al., 2015). Furthermore, to the extent that there is any correlation between GDP and 'wellbeing', the argument for this connection is solely dependent on definitions of wellbeing centered on universalised indicators, which are themselves reductive.

In the face of the climate crisis and broader ecological collapse, orthodox economists acknowledge that alterations in the formations of economies may need to occur, but that not only is growth still allowable, it is desirable so long as it is "green." One of the primary arguments for the possibility of green growth is the potential for decoupling (Hickel & Kallis, 2020)—with a specific focus on electrical energy production becoming decoupled from carbon dioxide emissions, and ecological impacts more generally. There are several problems with this. Firstly, this example in particular—that of energy decoupling—is cherry-picking and a common example of climate-reductionism. Even if energy production could be completely 'decarbonised', this says nothing about the other ecological impacts involved in the production, operation, and maintenance of renewable energy technologies. It is significant that this perspective constitutes a severely limited view; the ecological crisis extends far beyond the realm of energy systems. Even with this narrow definition, green growth is not happening in any meaningful sense (Parrique et al., 2019; Vogel & Hickel, 2023). There is no evidence that a full decoupling will be possible any time soon.

Furthermore, this is only with regard to absolute decoupling. Research does show that some degree of relative decoupling may occur (Hickel, 2019), but this is not without its issues, particularly from a (de)colonial perspective. The issue becomes clear when one considers where and how relative decoupling is most likely to be achieved. The most likely scenario is that relative decoupling will occur due to technological shifts in wealthy countries—as mentioned above, through the implementation of 'green' technologies, particularly in the realm of energy. This kind of transition process, however, is not self-contained; such a shift historically and currently entails colonial extraction for the acquisition of necessary materials, and that seems likely to be the case for the foreseeable future. This dynamic is made clear in the histories of unequal exchanges between the North and the South (Hickel et al., 2021b;

Hickel et al., 2022), and cannot be dismissed if what we seek is a globally just, decolonial degrowth.

The Anarchist Perspective

An anarchist perspective would generally accept the above arguments regarding the structural connections between capitalism, a growth imperative, and ecological harm, albeit with critiques of universalising formations of such concepts. In order to address the problems caused by these systems, anarchists also seek to understand the social foundations on which these systems are built—with a particular focus on the role of the state, the material arrangements produced by hierarchical social formations, and the flow and distribution of social power more generally. Grasping the foundational source of the drive towards accumulation and growth allows for the identification and articulation of radically different social, economic, and ecological formations.

An anarchist analysis of growth begins with a critique of the intrinsic nature of the state and its role in capitalism, and by extension, growth, productivism, and ecological degradation. One commonly-cited definition of the state, originated by Max Weber, is that the state is an entity that maintains a monopoly on the legitimate use of violence (as cited in Dusza, 1989). Another conceptualisation holds that the state is a set of centralized institutions with uniform laws and methods of governance operating in a distinct territory (Robinson, 2013). While these definitions do describe the nature of states, they only distantly hint at the political economy of states, and largely do not touch on the fundamental underlying social relationships (Sheorey, 2023). Neither of these definitions adequately addresses the basic question of why states exist at all, or what their social function is.

Marxist political economists have developed a fairly broad array of conceptualisations of the state, but they do have commonalities, particularly with regard to how they conceive of the relationship between state, capitalism, and class society more generally. Colin Hay (1999) arranges these conceptualisations into four broad categories: ‘The state as the repressive arm of the bourgeoisie’; ‘the state as the instrument of the ruling class’; ‘the state as an ideal collective capitalist’; and ‘the state as a factor of cohesion within the social formation’. These categories cover a fairly wide array of Marxist thinking and there is certainly significant nuance and difference within them. The overarching theme of these definitions is that they

place the state as an institution responsible in some way for the maintenance of capitalism, either narrowly as a tool used by capitalists, or more broadly as sets of institutions, processes, and relationships involved in sustaining a (class) society in which capitalism may flourish. Succinctly put, "the state is principally a tool for the establishment and maintenance of the hegemony of the rich and powerful over the poor" (Obo & Coker, 2014, p. 530), either directly or indirectly.

Anarchist conceptualisations of the state are also varied, but tend to differ significantly from Marxist ones, not so much in the analysis of the state's role with regard to capitalism (anarchists do typically see the state as an inherently oppressive and coercive formation that is involved in the maintenance of capitalism and class division), but rather with regard to the origin of the state, the causal directionality of its relationship to capitalism, and its fundamental social relationships. Drawing on assemblage theory (Dewsbury, 2011; Legg, 2011), anarchists might see the state as a 'machine' composed of a variety of structures and processes that, borrowing from Deleuze, act to accrete social power for the purposes of continuously defining a field over which political control can be implemented (Newman, 2009; Robinson, 2010). This consists of one set of processes that serve to aggregate power, and a second set of processes that exist to make that power easier to exert, by simplifying and making 'legible' (Scott, 1998) the people and territories over which that power is exercised. Understanding the state less as a tool specific to the maintenance of capitalism, and more as a set of processes evolved to build and maintain a wide range of oppressive and coercive hierarchical social relations, it then becomes clear that it is not the capitalist system specifically that gives rise to states, but rather vice versa.

With this conceptualisation in mind, one must ask the question: is the state structurally capable of facilitating degrowth? Common in the degrowth literature is a sort of two-pronged approach to enacting degrowth: a synergistic combination of localised, grass-roots political action and larger scale governmental policy. In other words: state action in response to popular demands and prefigurative action. This is not to say that there exists a uniform position towards the state within degrowth literature. Indeed, as D'Alisa and Kallis point out (2020), much of the existing literature does not operate with a well-developed understanding of the state, describing the ways in which analysis is often constrained by purely quantitative

and scalar, or otherwise rigidly, simplistic critiques of the state. D'Alisa and Kallis go on to suggest a political approach to degrowth that stems from a Gramscian theory of state. This is a more appropriate theory of state to work from than what is considered in much of the degrowth literature, given its focus on relationality and nuance, and is especially apt with regard to the necessity of challenging hegemonic thinking around growth. I concur that changing culture—addressing the civil society component of the state amalgamation—is critical.

D'Alisa and Kallis (2020) do briefly invoke an anarchist perspective in their analysis, but in a very reductive way, stating that "Even if we were to abolish political institutions, as some anarchists want, domination and oppression would still operate in civil society, which is permeated by power relations and coercion too" (p. 6). This is not an accurate depiction of the anarchist perspective; anarchism is not solely focused on narrowly abolishing discrete public state institutions, but rather eliminating hierarchical and coercive relationships more broadly, of which these state institutions are just one, albeit very visible, manifestation—alongside arguably much older hierarchical arrangements such as patriarchy, racialisation, and anthropocentrism. The path to broader social change that D'Alisa and Kallis propose is one that involves both everyday change in practice and social relations (interstitial strategies), that then eventually result in change of coercive institutions (symbiotic strategies). They state that "Only the effective combination of interstitial and symbiotic strategies can legitimize in specific moments and contexts a sharp rupture with powerful interests" (D'Alisa & Kallis, 2020, p. 6).

The integral model of the state that the authors advocate for is in a way well aligned with an anarchist perspective, in that it understands the problem is multifaceted and marbles throughout both traditional 'government' and civil society. Similarly, the anarchist approach to degrowth is not limited to abolishing government, but is a more thorough and prefigurative reorganisation of all aspects of society—an approach that I think aligns well with the counter-hegemonic component of the strategy D'Alisa and Kallis (2020) lay out. However, when it comes to enacting and enforcing degrowth policy, I would ask: is any institution or social formation that wields the power to do so actually structurally inclined towards degrowth? While I agree that there is an important interconnection between wider society and specific

institutions of coercion and enforcement that must be considered, I do not think that those institutions are structurally capable of producing degrowth, being the aggregate political powers that they are. Furthermore, I would question whether a society divorced from current hegemonic ideas of power and accumulation, and instead focused on broad liberation, would even (re)produce such institutions. While I agree with D'Alisa and Kallis's point that a narrow focus on the rupture or capture of specific institutions is not effective, I do not think we should assume that they are necessary or will exist at all as part of a liberated degrowth society (or 'integral state').

Relatedly, it is important to understand the relationship between state institutions and colonialism, and there are two main aspects to this. At a concrete level, as outlined above, the aggregational drive for power and wealth embodied by capitalism is also central to broader state functions, and this carries over into the colonial processes which fuel both. "The state is colonialism" (Dunlap, 2023), in the sense that it embodies the processes of statism—delineation/demarcation, simplification/legibility, control, and extraction—applied outwardly. A more abstract concern has to do with our broader understanding of the world: we cannot move away from systems built on colonial extractions while maintaining colonial epistemologies and ontologies. Far too often academic discourse on degrowth perpetuates those colonial mindsets through advocacy for techno-managerial solutions and epistemic hierarchy, of which statism, particularly the forefronting of 'policy' and 'legality' as primary mechanisms, is a central example (Nirmal & Rocheleau, 2019, p. 469). Rather than a universalised statist approach, a decolonial degrowth ought to be pluriversal, consisting of networked, differentiated movements (Nirmal & Rocheleau, 2019, p. 471; Sheorey, 2025).

The accumulation of wealth—capital accumulation, a central pillar of capitalism and a primary driver of metabolic growth, as well as colonial extractivism—is in essence the material manifestation of the accumulation of social power. Referring back to the anarchist, machinic conceptualisations of the state, it is a collection of processes and social relationships that may not always be in perfect harmony, but still generally act together towards the predictable end of power aggregation. Whether you think of the state as a discrete entity or a heterogeneous amalgamation of sociomaterial relations, the outcome is much the same, and I think the belief

that one can change the nature of state institutions—and particularly their power relations—simply by challenging hegemonic social norms and changing culture ought to be questioned.

However, it may be worth putting aside the label of 'state' for a moment. The basic issue is that the accumulation of wealth (and the administration of resources) is an effective pathway to accreting and maintaining social power, and so social formations that facilitate the accumulation of social power in a small portion of a population will give rise to capitalist relations, the previously discussed institutions of coercion and enforcement, and, as an extension, the growth imperative. Thus, socio-political approaches that rely on hierarchical, centralising, homogenising social formations are *structurally incapable* of producing degrowth. Degrowth can only proceed along pathways that embrace socio-political relationships that fight that accumulatory tendency—which is to say, socio-political action towards degrowth must be prefigurative (Meissner, 2021; Sheorey, 2023).

Powering Growth

A major element in devising a socio-political degrowth pathway lies in understanding how and where to attack the growth paradigm. The anarchist perspective outlined above suggests principles for a socio-political approach—challenging systems that facilitate accumulations of social power, and thus material accumulation, capitalism, and metabolic growth. From a more straightforwardly material standpoint, we must understand some of the physical prerequisites for growth. This is where the question of the production of (and construction of the idea of) energy becomes critical, as continuously-increasing material production relies on the availability of ever-more energy. It has always been the case, to some degree, that energy is a significant metabolic factor (Ayres et al., 2013) and input for a wide variety of lifeways. But it is a point of special importance now, given the contribution of traditional energy production systems to the ongoing climate crisis and the resultant attention given to the matter of (just) energy transitions.

Special attention is being paid here specifically to the production of *electricity*, not so much energy as a whole, because while the harnessing of energy has always been an element of all life processes, the production of electricity, especially as it exists today, is somewhat unique in both its social and ecological impacts. In terms of social impacts, what makes the

production of electricity worthy of special note is the way in which it is oriented towards certain purposes, and relatedly, certain forms of ownership and management. In a sense, mass electrical production was conceived in large part to enable capitalist industry (Lohmann, 2015), meaning that it is essentially *its own* capitalist industry, and this leads to certain kinds of organisational arrangements—specifically, large scale and centralised electrical production facilities that are easily enclosed and controlled, in contrast to the more distributed, autonomy-friendly forms that energy (generally) can take. The ecological impacts are a direct consequence of this transition: a shift away from energy usage organised primarily around subsistence and sufficiency, and towards an end of maximising the productive capacity of labour, and, ultimately, energy as a commodity, leads towards ever-increasing production. This, in turn, results in increasing ecological harm.

The literature is increasingly showing that the world cannot meet climate goals while continuing to increase electrical energy production (Hickel et al., 2021a). Given this reality, the question becomes one of utility: how do we make the most of the electrical energy that can be produced in an ecologically sustainable and socially just manner? There is significant research to suggest that levels of electrical production (and consumption) are only correlated to indicators of social wellbeing up to a certain point, after which there may be a decoupling (Steinberger & Roberts, 2010; Steinberger et al.,2020), or even potentially a negative relationship (Akizu-Gardoki et al., 2020). If even the relationship of electricity production to mainstream indicators of wellbeing is unclear, and those indicators themselves are too universalised to be meaningful, then the door is open for a radical reorganisation of energy systems.

The drive for ever-more electricity production is not just a narrow problem with regard to ecological sustainability, nor a purely material contributor to metabolic growth, but also constitutes a reinforcing factor in the extractive, productivist, statist-capitalist system itself through its implication in relationships of violent colonialism and coloniality (Dunlap & Arce, 2021). The issue of resource colonialism as it pertains to the energy transition is well represented in the literature, particularly when it comes to the subject of extracting lithium (Jerez et al., 2021) and other currently necessary materials (Zografos, 2022) for the construction and maintenance of a “clean” or “renewable” energy infrastructure (itself a

dubious term [Dunlap, 2021]), but there are multiple facets to this issue. The obvious one is the perpetuation of colonial relations between the imperial core and the global South. Perhaps more relevant to the topic of degrowth, however, is the way in which it accepts and extends hegemonic logics of extraction, production, and consumption, often justified through a lens of developmentalism and the beneficial role of the state and capital therein. Ultimately, the relationships that underpin colonialism are the same that underpin statist behaviors of demarcation, control, and coercive extractivism towards their own populaces (Dunlap, 2023).

Taking into consideration the variety of ways the organisation of the contemporary production of electrical energy impacts socio-ecological lifeways, it follows that we must, as a society, be conscious of the ways in which we consume that energy, and prioritize uses that benefit everyone. It is here that the concept of 'social provisioning' (Vogel et al., 2021)—a focus on production, distribution, and consumption of goods for the provisioning of basic needs for all, ideally through some form of collective decision-making process—becomes relevant, as opposed to relying on market mechanisms incapable of capturing collective intent. The question then becomes one of implementation: how, with regard to both geophysical structuring and socioeconomic arrangements, do we organise electrical energy systems that are structurally oriented towards social provisioning?

3. Moving Forward

There are, ultimately, two aspects to the "degrowth movement" (to the extent that such a thing exists) as it currently stands: firstly, a heavily academically-oriented side, and a long-established organic and emergent aspect that exists as variegated, living, responses to growth and the systems that perpetuate it. This paper is in a sense oriented towards the former as its intended audience, and as part of that, I want to stress that the relationship between the two cannot take on the form of scholar-as-designer, academic-as-engineer, or theorist-as-director. Such relationships run fundamentally counter to anarchic configurations—which is not inherently a problem; I am not interested in getting people to label themselves anarchists—but it does risk prefiguring and (re)producing the exact sort of sociomaterial formations we seek to deconstruct. That said, I do believe there is utility in *some* degree of

abstraction and generalisation (with the understanding that the active insurrection against the growth paradigm is necessarily heterogeneous, dynamic, and often illegible), and so to that end this next section will focus on a generalised analysis of degrowth patterns and what additional research may be beneficial.

Hypothesis

Based on the theoretical analysis presented in the first part of this paper, it is possible to put forward a hypothesis on how the rearrangement of energy systems along certain lines might help to facilitate a broader degrowth:

> ***IF*** *electrical energy systems were restructured according to anarchic principles,* ***THEN*** *the growth of social metabolic throughput would be hindered to the point that broad degrowth could be achieved.*

There is of course significant complexity and nuance in that hypothesis, so it is worth discussing what is meant (and implied) by each part of the statement. As far as the question of "anarchic principles" is concerned, there are a few elements. While an overarching principle of anarchist organisation would be context-sensitivity and non-prescription, there are certain characteristics of anarchic organisation that consistently arise. I would characterise the main trends as an embrace of heterogeneity, an emphasis on autonomy, an opposition to all hierarchy (and a consequent adoption of social arrangements that evenly distribute social power), a prefigurative approach, and forms of network cooperation that function on a basis of consensus- or consent-based decision-making (Sheorey, 2023). Part of the complexity and difficulty in describing anarchic organising is that these principles allow for a wide array of concrete organisational forms, often dependent on context, but that is part of the point—it cannot be dictated from above. And that applies to energy systems: there are many ways they could be arranged that would roughly fit an anarchic ideal that would still allow for necessary interconnection.

The general principles listed above can be elaborated on as such:

> *Prefiguration refers to the practice of embodying our ideals in our organising—essentially, unifying the means and the ends—and makes organising both effective in that we're practicing and producing the social relations we wish to see, as well as theoretically more pleasant, because we're not waiting for some arbitrary point in time to live and interact in a manner consistent with our principles. Heterogeneity refers to the mixed and differentiated nature of a movement, allowing for the idea that people can have different methods, arrangements, and focuses and still benefit from interconnection. Diffuse and non-hierarchical have to do with power relations: diffuse refers to distributions of power that are dispersed, while non-hierarchical indicates arrangements in which no one has the ability to coerce others. The principle of autonomy—the idea that a person has full and final control over their own activity, free from coercion and prescriptive processes—is a direct follow-on from this sort of horizontal and distributed power arrangement. Finally, while we all as individuals are autonomous, we are not fully independent—we are engaged in shared struggle, and as such the principles of cooperation and mutualism are key: we (inter)act with solidarity, and cooperate when and where we can to everyone's benefit.* (Sheorey, 2025)

With regard to the prediction, the general idea is that the overall production of electrical energy will decline with new energy formations being tooled towards social and ecological health over time as orthodox energy systems are replaced by anarchic ones. As a result of this shift, an increasing lack of access to ever-increasing electrical energy will reduce the amount of socially unnecessary energy-intensive industrial commodity production, and disincentivize the inception of new endeavours of that kind. In essence, a shift in the intent of energy production to the satisfaction of basic social needs will reduce the availability of a core input of harmful growth, and thus help facilitate degrowth, or at least post-growth.

Reasoning and Support

The basic reasoning underpinning this hypothesis is as follows: if forms of social organisation that facilitate the accumulation of social power produce materially-accumulative socioeconomic relations, then social formations that restrict the accumulation of social power could prefigure post-growth economies. Furthermore, if electrical energy is a critical

foundation and input of productivism and growth, moving the energy system away from a commodity-oriented growth model could facilitate a broader movement away from growth-oriented economies. Taken together, these ideas produce the overall suggestion that if energy systems organised in such a way so as to prevent the accumulation of social power became more prevalent, then more and more energy will be produced purely on a basis of social need, undermining the commodity-driven capitalist model and thus hindering runaway growth.

So far, the reasoning behind this hypothesis has been based on an analysis of social and economic theory, and is thus quite abstract. However, there are concrete grounds on which to base such a prediction. There is significant emerging research on the idea of "new energy spaces" as described initially by Bridge and Gailing (2020), and elaborated on by others. This concept essentially recognises the socially, economically, and politically variegated nature of different energy spaces and integrates a cognizance of the way spatiality and unique social contexts influence the function of energy systems, and the ways in which they operate and change. Though not always the case, these spaces often envision and produce novel energy system arrangements, which frequently include anti-capitalist, anti-statist, and decolonial elements. Carlos Tornel (2023a, 2023b) has documented and examined the disruptive potential of, as well as obstacles faced by, these kinds of projects, with a particular focus on decolonial projects in the global South. These, I believe, hold a high potential for the sort of growth-disruption that radical energy system formations can produce, due to the implicit link between colonial extractivism and statist-capitalist accumulation and growth.

These new energy spaces represent fertile ground for further (appropriate) research, as will be discussed in the following section. But first, I will briefly discuss a couple of examples I have been involved in myself as an organiser and researcher. Reclaim Our Power is an energy democracy and utility justice campaign in California that I was involved in as an organiser and researcher in 2019 and 2020. While certainly not an explicitly anarchist organisation, it displayed many anarchic characteristics in its form and process, essentially forming a network of a variety of front-line community organisations, and operating through mostly transparent, non-hierarchical, and consensus-based decision-making processes. It exists as a fascinating case study and research subject (Sheorey, 2021a), given its form and vision, and the context

it operated in: it was explicitly seeking to make the California energy system responsible directly to its consumers, but was working in a setting where the existing energy system is dominated by a state-backed corporate monopoly in the form of Pacific Gas & Electric. These kinds of projects are worth researching to understand how anarchic and communal principles might be advocated for in very constrained, statist-capitalist contexts, and then compared and contrasted with efforts in more open spaces.

As a point of comparison, I have also interviewed several people involved in the Casa Pueblo microgrid project in Adjuntas, Puerto Rico, and produced a case study (Sheorey, 2021b). This case study, more than anything, provides an example of the critical importance of socio-material context in the development of such projects, and, for researchers, the necessity of engaging with non-academic entities in a collaborative spirit with minimal preconceived notions. The case study goes into the project's history and process in more depth, but the critical takeaway is that the project's outcomes are very much a result of the context, the post-hurricane Maria material conditions and the preexisting social formations of Adjuntas in particular. In a sense, this project is an excellent representation of the synthesis of what Kumar and Taylor Aiken (2021) call "community by contract" and "community by solidarity" — a combination of purpose-driven communal engagement and the recognition and harnessing of existing community relations. Understanding this sort of project, and how its results are shaped by its context in comparison to projects with similar goals in other settings, is an important area of research insofar as we wish to understand the role of new energy spaces in a degrowth transition.

An interesting question that arises when looking at these two endeavours is how projects seeking to develop novel (and potentially anarchic) energy system formations might interact with the state, and as these two examples demonstrate, the answer to that question is heavily dependent on context. In most contexts, it is not wise (or possible) to completely ignore the state, as statism is the dominant form of sociopolitical organisation in most places. However, that relationship can vary, ranging from insurgent opposition, particularly against statist-capitalist energy projects (Tornel, 2023a) to careful engagement that negotiates power and siphons off resources for use in developing autonomous projects (Angel, 2017). In California, attempts at developing autonomous energy formations were inherently forced to interact

with and struggle within the state, as most of the existing infrastructure was owned and operated by a private entity working in close collaboration with the state. Puerto Rico, on the other hand, is a bit different—some of the people and organisations involved did engage with the state in shaping policy post-Maria, but since there was already an ongoing energy infrastructure crisis and flux in state response, the concrete development of the local microgrid was mostly a private affair, involving different stakeholders in the community and material support from a charitable foundation.

Neither of these are necessarily the "correct" option, and it remains to be seen how effective or sustainable either approach is, but the point is that even as the goal may be complete autonomy, the near omnipresence of state institutions or processes (and the capitalist systems they are intertwined with) means that some engagement will be inevitable, and the nature of that interaction is context dependent, and must be guided by general principles rather than rigid doctrine. Maintaining dependence and control are important state processes so they will rarely be amenable to the kind of autonomy that anarchic energy systems would be built on and seek to foster, but they also hold or have access to significant resources—and so, like much of anarchist practice in general, dealing with the state will entail a multi-pronged approach and balancing act of building alternatives to state structures while engaging militantly with the state as appropriate to the context (Sheorey, 2025).

In my experience, a common thread winding through energy democracy and sovereignty movements is that of decommodification, reflecting a desire for the production and application of electrical energy to be focused directly on social wellbeing, *as determined collectively by those involved in and impacted by the production, distribution, and utilisation of that energy*. The term 'decommodification' itself, while appropriate, can sometimes come across as overly technical and inaccessible, and so the language of 'rights' is often invoked: specifically that access to electricity is such a crucial element of basic living in the modern day that it should be considered a 'human right', freely available to all, unrestricted by capitalist enclosure and market mechanisms. This framing raises the question, of particular interest from an anarchist perspective, of who is granting and protecting that right. In many contexts, it is the state that plays this role, but this can make those rights brittle. When rights are granted to those with less power by those with more, the relationship established is akin to

that of charity, and what is granted can be easily revoked. What would be better is a framework that treats rights as analogous to solidarity; that is to say that we all mutually recognise each other's needs and capacities and engage in shared support and struggle to ensure those needs are met—rights not simply as the end point of struggle, but as continuous struggle itself. This conceptualisation is somewhat akin to and draws heavily from Henri Lefebvre's idea of the right to the city, particularly as it is portrayed by Mark Purcell (2014) as "a struggle by people to shake off the control of capital and the state in order to manage their affairs for themselves" (p. 145).

4. Research Agenda

The hypothesis presented, as well as the broad theoretical basis it emerges from, presents a number of assumptions that should be tested. This leads to several related and essentially sequential research questions that might constitute the outline of a useful research agenda. In this section, I will present the core questions before indicating several general research approaches I believe would be useful in investigating these topics.

Research Questions

- How do the visions advocated for by energy justice and sovereignty movements, particularly those in 'new energy spaces', engage with questions of ownership, governance and stewardship? Do they tend towards more meaningfully 'democratic' socio-political formations when it comes to the management of energy systems?
- Do more democratic, participatory, or consensus/consent-based energy system structures correlate to any shift in the purpose of production of energy, or, more fundamentally, the social construction of energy itself? If so, to what extent, and does that shift favor more production for direct usage and social provisioning?
- Do energy system assemblages that see energy as a right (rather than as a commodity) and thus produce it according to usage needs, see significantly lower demand for energy (and so less production and consumption)?
- Have reductions in energy production resulted in sociocultural changes with regard to perspectives on extractivism, productivity, and other ideas that feed into the hegemonic ideal of growth? Could they?

Numerical/Statistical Modeling

One potentially valuable investigative method would be the expansion of statistical energy modeling techniques. The numerical modeling of energy systems is of course not a new approach, and indeed the introduction of renewable energy resources into existing and new electrical grids is a process that has spurred the development and refinement of a variety of modeling techniques (Bhattacharyya & Timilsina, 2010; Pfenninger et al., 2014). Most of these, however, are primarily technical in nature, occasionally taking a broader view that includes policy. Very few attempt to integrate more complex sociological dynamics, but I would suggest that such models are sorely needed. Energy models that can be used to predict how differing forms of ownership and governance, alongside more traditional material factors of geography and technological characteristics, would impact energy demand (and production) as well as access to energy and overall social provisioning, would be of particular utility to degrowth research focused on energy systems.

Historical Case Studies

Though capitalist social relations are largely hegemonic, particularly in the global North, and it is the case that this hegemony extends to mainstream discourse around the organisation of energy systems, time and space are rich with examples of a variety of ways to organise ecological/resource relationships, and this is no less true of energy systems. It would be worthwhile to build a systematic and organised database of energy system projects that are constituted of different and novel socio-economic and ecological relations, including the nature of the social movements, communities, and organisations that produced them. Having this data assembled in one place, organised relationally, and accessible to all would make it easier for anyone (not just those in the academy) to identify patterns and trends, and thus understand what sorts of arrangements in what sorts of contexts produce what kinds of results (with a focus on understanding configurations relevant to degrowth) and also understanding how those systems were socially produced. This, in turn, especially if formulated in an open way, could help facilitate the formation of novel energy formations.

Movement Collaboration

Perhaps the most important (and currently under-represented) facet of degrowth research, especially when it comes to energy, is active collaboration with existing movements,

particularly outside the imperial core. While there is no doubt that there is significant (and increasing) literature regarding the connections between degrowth, energy, and colonialism, there is relatively little that meaningfully attempts to develop an understanding of degrowth from a non-academic, embedded, social movement perspective. Working to understand relevant social movements—their needs, visions, and the contexts that shape those things—is critical. This kind of research would ground the understanding of degrowth in real contemporary socio-material conditions. Additionally, insofar as degrowth research has a goal of facilitating actual degrowth, understanding how degrowth is integrated into a variety of existing social movements (without claiming them as 'degrowth movements' in an act of colonialist epistemology) is paramount. Co-production of knowledge, theory, and visions of degrowth with social movements is necessary in order to make degrowth a nuanced, contextually-differentiated, and broadly applicable proposal.

4. Conclusion

The purpose of this paper has been to present a particular perspective on degrowth, which could point to possible avenues of research that would prove useful to a goal of understanding and supporting a radical and pluriversal degrowth. Specifically, I have attempted to apply an anarchist lens to the subject matter in order to arrive at a more fundamental and politically-nuanced understanding of the foundations of growth, so as to help ground the articulation of degrowth solutions in a more radical social analysis. I suggest that while much of the material analysis of contemporary social metabolisms is strong, based on rigorous empirical research, the social and political analysis of growth would benefit from further development, particularly through the analysis of, and appropriate engagement with, the kinds of insurgent projects and social movements that incorporate, explicitly or otherwise, anarchic and/or degrowth elements.

The core argument of the theoretical framing I present is that material accumulation and growth are the material manifestations of the accretion of social power, which does not just become obvious in capitalist relations, but is also a feature of states, as well as hierarchical social formations more generally. Building off of that, I argue that since systems tend to reproduce themselves, hierarchical, centralising, and statist forms of social organisation will

then in turn tend to produce economic relations focused on material accumulation and growth. The conclusion of this line of thinking is that proposals for how to enact degrowth that center the state and other social formations that embody these sorts of hierarchical and centralised arrangements are unlikely to succeed because they run into *structural* obstacles.

Combining this political analysis with the understanding of energy production as a critical factor of growth and the socioecological harm it causes, I then presented a hypothesis of how radical reorganisations of electrical energy system formations could help to facilitate a broader reduction in harmful energy production and be a commensurate benefit to heterogeneous lifeways. The essence of this hypothesis is that energy systems that utilize forms of ownership and governance that do not allow for the centralization of control of those systems in a few hands would prompt a change in how and why energy is generated—from a commodity-oriented, market framework to one focused on social and ecological health. And then, it follows that if one of the primary inputs of growth were redirected and restricted, then dependent production would also likely shift by necessity.

I suggest that there is some anecdotal evidence that would support these predictions, pointing to a couple of relevant examples and the prospects of 'new energy spaces' in general. But there are many untested assertions in this hypothesis, and that significant additional research would be beneficial. I indicate three general approaches to this research: firstly, an active collaboration with relevant social movements, with the dual purpose of contextualizing degrowth scholarship and acting as an avenue of degrowth advocacy, which would be supported by, secondly, a statistical and numerical approach, seeking to model how variations and combinations of various energy system factors, both material and social, would shape outcomes; and thirdly, a historical analysis which would attempt to identify patterns or trends in the ways different formations facilitate those outcomes, with a particular focus on energy production/consumption and degrowth. In this, I support the plea made by Nirmal and Rocheleau (2019): "We urge degrowth scholar-activists to enter that process in a decolonial mode of seeing and being-in-relation, bringing their best skills and creative powers to co-design future alternatives, as peers, in a horizontal movement of movements" (p. 481).

Conflict of interest

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