DEGROWTH & MODERN MONETARY THEORY: BUILDING BRIDGES FOR SOCIO-ECOLOGICAL SUSTAINABILITY AND JUSTICE

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Abstract

This thesis seeks to forge a conversation between two schools of contemporary political-economic thought—degrowth and modern monetary theory. With today's urgent, multiple, and interlinked socio-ecological crises, the degrowth school of thought has become increasingly relevant. While the degrowth movement has proposed a range of policies and visions for a post-capitalist future, the structural growth imperatives of capitalist states make degrowth visions politically and economically challenging to realize. Thus far, degrowth policies that aim to weaken society's growth imperative and start building a post-capitalist society have largely been raised from the assumption that governments are limited in budgetary terms, implicitly informed by the hegemonic neoclassical economics lens. However, modern monetary theory (MMT) has recently permeated the public debate, offering an alternative take on public spending, deficits, and the government's fiscal policy space. MMT argues that monetary sovereign states are not fiscally constrained in the same way that households and non-sovereign entities are—instead, the actual limitations to spending are the resources available to a given nation. Yet, MMT theorists give insufficient attention to ecological considerations, exemplified by their tendency to take continued economic growth for granted and overlook ecological limits, particularly from a global justice perspective. Using an Ecological Political Economy lens, this thesis initiates a conversation between the degrowth and MMT scholarship, finding that while there are both distinct tensions between the two schools, there are also many synergies and possibilities for further cross-fertilization between them within the normative goal of socio-ecological sustainability and justice.

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1.0 Introduction

Today's ecological and social crises constitute unprecedented challenges to the world: Multiple planetary boundaries have already been breached (Steffen et al., 2015), and the world is currently on a trajectory toward at least 3 degrees of global warming by the end of the century, *even* if all countries meet their climate targets in the Paris Agreement (which itself is highly unlikely) (Lenton et al., 2019). Moreover, the consequences of Earth's destabilization are felt unevenly across the globe, with communities in the Global South bearing the brunt of the costs despite having contributed to it the least (Hickel, 2020c; Schiermeier, 2018).

While the IPCC (2018) has advised that staying within 1.5ºC of warming will require "rapid, far-reaching and unprecedented changes in all aspects of society" (p.1), little has indicated that such change is underway. Instead, the dominant response by decision-makers globally to these urgent, multiple, and interlinked crises has been to embrace the concept of "green growth." The premise of green growth holds that there is no contradiction between a growing economy and a prosperous environment (OECD, 2017); instead, the two are assumed to go "hand in hand" (CBC, 2016, para.3). Following the green growth narrative, economic growth is considered both a financing mechanism for a green/just transition and a "common sense" objective, necessarily equated with prosperity and progress (OECD, 2017; Pollin, 2019).

"Degrowth" is a global movement that raises concerns about the green growth approach, stressing the historically tight coupling between economic growth and environmental degradation (Kallis et al., 2020). Degrowthers argue that the rate of decoupling between economic growth and ecological pressures needed for the green growth path to be ecologically and socially viable is both unproven to date and unlikely to happen quickly enough to avoid catastrophic ecological breakdown (Hickel & Kallis, 2020; Parrique et al., 2019). Instead of

relying on green growth, degrowthers recommend a planned down-scaling of material throughput in high-income countries by abandoning economic growth and GDP as signifiers of prosperity. In its place, they propose an alternative post-capitalist society based on care, sufficiency and socio-ecological justice (Hickel & Kallis, 2020).

The literature examining empirical evidence for decoupling, including a recent two-part systematic review of the relationship between GDP, resource use and GHG emissions, has increasingly lent support to the degrowth position (D'Alessandro et al., 2020; Haberl et al., 2020; Vadén et al., 2020; Wiedenhofer et al., 2020). Additionally, over 11,000 scientists recently united behind an article arguing that economic growth is a key driver of climate breakdown and that our economic system must shift from prioritizing GDP growth toward meeting the basic needs of humans, reducing inequality, and sustaining ecosystems (Ripple et al., 2020).

In light of this literature, it appears increasingly problematic for governments to continue to embrace green growth. Yet, in capitalist societies, public sector provisioning, employment and overall economic stability are structurally *dependent* upon economic growth (Barry, 2020; Paterson, 2016), making a degrowth/post-growth path politically impossible. Neoclassical economic theory, described as the "ideological rationalization of capitalism" (Zafirovski, 2019, p. 828), occupies a hegemonic position in society and has done so increasingly since the 1970-1980s. According to neoclassical economic theory, the government is always fiscally constrained as it depends upon the taxes of the private sector to fund its activities (Mankiw, 2011). If growth comes to a halt, people lose their jobs, implying less tax revenue for the government and overall social anguish (Ibid.). Although the government could "borrow" money from the private sector to prevent austerity measures, such deficit spending, neoclassical economists argue, is neither

fiscally responsible nor sustainable (Mankiw, 2018). From a mainstream economic perspective, then, it is undesirable for governments to stop pursuing economic growth.

However, the heterodox macroeconomic theory, modern monetary theory (MMT), has received much attention lately for challenging neoclassical assumptions. MMT theorists argue that monetary sovereign states spend before they collect funding, i.e., they are not dependent upon taxes to fund their activities and can never "run out of money" (Kelton, 2020). Instead, the real limits to spending in the economy lie in the total resources and labour available, which, if surpassed, manifests as inflation, i.e., the general price level rises as too much money chases too few goods and services. Taxes do not fund government expenditure—rather, it is a tool to control aggregate demand and ensure that the national currency remains widely accepted (Ibid.). Thus, if there is an evident societal need, an available workforce and enough resources, stringent fiscal policy is unfounded (Kelton, 2020; B. Mitchell et al., 2016). From an MMT lens, then, monetary sovereign governments have a more expansive fiscal policy space than mainstream economic thought would have us believe.

Yet, like most other heterodox economic schools, much of the MMT literature seeks continued economic growth (Kelton, 2020; Nersisyan & Wray, 2021). However, some MMTers have started to connect degrowth/growth-critical perspectives with the MMT lens (Hail, 2018; Unti, 2018). Similarly, some degrowthers (Alexander & Williams, 2020; Hickel, 2020a) have linked their degrowth proposals to the MMT lens, arguing that MMT might be able to lend some insights to the degrowth project. In light of these emerging connections between the degrowth and MMT literature, I seek to more fully bring the degrowth and MMT literatures into conversation with each other, investigating the tensions and synergies between their political-economic assumptions and propositions. By doing so, I hope to shed light on their respective

strengths and limitations and highlight what they might learn from engaging with each other. Given the socio-ecological costs of continued economic growth in the Global North, it is vital to investigate if and where bridges can be built between different schools of thought to expand the possible paths for a more socially just and ecologically sustainable society. In exploring this area, two research questions are guiding my research:

1. What are the synergies and tensions between the degrowth and MMT scholarship?
2. How can degrowth and MMT insights be used together in the direction of socio-ecological sustainability and justice, and what are the limitations?

To answer these questions, I undertake thematic content analyses (Elo et al., 2014) of papers, books and documents within degrowth and MMT, respectively. I consider the synergies and tensions, focusing on their respective underlying political-economic and ontological presuppositions, finding that there are several opportunities for further cross-fertilization between the two schools as they both, in isolation, have some economic and ecological blind spots. I then examine in a more concrete sense how degrowth and MMT ideas on economic limits could, in conjunction, inform the discussion about what an ecologically just and sustainable policy space might look like, using the Green New Deal (GND) policy framework as an example. I show that by combining their respective perspectives, i.e., MMT's attention to inflationary limits with degrowth's perspective on ecological limits in line with global ecological justice and sustainability, a more ecologically just and sustainable conception of policy space can be formed. This thesis is approached from an Ecological Political Economy (EPE) perspective (Craig, 2016), paying particular attention to the interrelation between capitalism, economic growth and the ecological sphere.

2.0 Literature Review

The proposed thesis will engage with two sets of literature: degrowth and MMT. Below, the degrowth and MMT schools of thought are each briefly introduced and situated within their respective intellectual and historical contexts. Each school is also placed within more contemporary debates, alongside a discussion of some common critiques faced by each school.

2.2 Degrowth

Degrowth can be described as a concept, movement, and scholarship that is based on a socio-ecological critique of economic growth and capitalism. Degrowth outlines a vision to transform society from expansionism, exploitation and competition toward care, equality, and socio-ecological justice (D'Alisa et al., 2014). This is deemed to require an aggregate reduction of excessive consumption and production in the Global North and a structural redistribution of the common riches in society to ensure that everyone can meet their basic needs within planetary boundaries (Ibid.). This includes ending colonial systems of extraction and appropriation of Global South labour, resources and atmospheric commons that continue to uphold the Global North's "imperial mode of living" (Brand & Wissen, 2021; Hickel, 2021). Some policies that degrowthers have highlighted include a universal basic income, universal basic services, a job guarantee, a shorter workweek, a minimum and maximum income, wealth taxation, debt cancellations in the Global South, and more (Parrique, 2019). These policies are, in different ways, expected to reduce the growth imperative and enable societies to decommodify life.

2.2.1 Historical and Intellectual Context

Several disciplines and theories have influenced today's degrowth movement. Early ecological economists, particularly Nicholas Georgescu-Roegen (1971) and his student Herman

Daly (1973) argued that there were biophysical limits to economic growth, something that was also echoed in the Club of Rome's *Limits to Growth* report around the same time (Meadows et al., 1972). Ecofeminist theories and scholars have also been influential in the degrowth movement (Gregoratti & Raphael, 2019). Leading thinkers like Maria Mies (1986) and Marilyn Waring (1988) wrote extensively on the preconditions for which capitalist growth could exist in the first place, i.e., through the systematic exploitation of women, nature and people, especially in the Global South. In highlighting the socio-ecological injustices (re)produced through patriarchal value systems, they advanced discussions around alternatives to capitalist growth, development and productivism, paving the way for much of today's degrowth literature (Ibid.).

Other significant contributions to degrowth have come from post-development thinking. At the beginning of the 21st century, Serge Latouche, one of the key thinkers in the early degrowth movement in France, drove critiques of Western conceptions of development and progress, which tended to be equated with economic growth and high-consumption lifestyles (D'Alisa et al., 2014). Latouche popularized the phrase "to decolonize the imaginary of growth," underscoring the ideological shift needed before a degrowth society could be realized (Latouche, 2009). Degrowth became an activist slogan in the early 2000s, challenging the hegemony of growth (Schmelzer & Muraca, 2017) and critiquing Western notions of development and progress (D'Alisa et al., 2014). Together, these influences have contributed to degrowth's ecological and ideological critique of economic growth and capitalism.

2.2.2 Contemporary Degrowth

Degrowth has evolved much since the early 2000s. No longer just an "activist slogan" intended to cause disruption, degrowth has turned into an academic field and social movement with roots spreading globally (Cosme et al., 2017; Demaria et al., 2013; Kallis et al., 2020).

Scholars have highlighted the growing ecological costs of growth-based economies and the associated social costs, such as growing inequality, weakened labour regulation, financial crises, and increased exploitation of current and future generations (Kallis et al., 2020). Additionally, through insights from Marxist dependency theorists (Amin, 1987) and human ecologists and ecological economists (Hornborg & Martinez-Alier, 2016), degrowthers have increasingly argued that economic growth in the Global North rests upon systems of colonial extraction from the Global South[1], including the net appropriation of atmospheric commons, labour hours and embodied raw material[2] (Hickel, 2021). Drawing upon the literature on "ecological debt" and "unequal exchange" (Hornborg & Martinez-Alier, 2016), degrowth in the Global North has been framed as an anti-imperial step in a larger process of decolonization (Hickel, 2021; Tyberg, 2020). However, making degrowth politically viable remains a challenging task, especially as the imperative to grow is structurally embedded within capitalist states and reinforced through orthodox economic dogma.

Indeed, the lack of broad public and political support for the degrowth vision is perhaps the movement's most apparent Achilles heel. While the field of degrowth is flourishing in academia, there are fewer examples of degrowth policies making their way into policy and decision-making circles. In a review of the degrowth literature, Cosme et al. (2017) have noted that many degrowth proposals are vague and lack details, making their policies "ambiguous and confusing in the context of policy debates" (p.23). Moreover, the same review also observes inconsistencies between the degrowth discourse and their policy proposals, noting that the

[1] While the Global North and South concepts are useful, it should be noted that this binary division is a simplification that may overlook many nuances, e.g., the rich in the South and the exploited and impoverished in the North, and should thus not be taken as strictly geographical terms (Hanaček et al., 2020).

[2] "Embodied raw material" refers to all traded material in addition to all the material embodied in the trade of goods and services (Dorninger et al., 2021). It is often expressed as raw material equivalents (RME) and is measured in Gigatons (Schaffartzik et al., 2015).

degrowth discourse tends to favour bottom-up proposals while many actual policy proposals are top-down in nature. In response to this, D'Alisa and Kallis (2020) have sought to initiate a conversation about the role of the state in a degrowth transition, arguing that both bottom-up and top-down action have important roles to play in the transformation of society.

Moreover, Büchs & Koch (2019) argue that one of the structural barriers to the feasibility of degrowth lies in an intergenerational conflict around well-being and needs satisfaction. They reason that "deliberative forums" whereby the needs and well-being of current *and* future generations are considered could help foster the cultural shift needed to improve the political feasibility of degrowth (Büchs & Koch, 2019). In another discussion about the political challenges facing degrowth, Drews & Antal (2016) have pointed out that degrowthers may benefit from re-branding the movement given the tendency of people to associate the word "degrowth" with recession. Drawing upon the cognitive science and psychology literature, they argue that even though this initial negative reaction is often caused by a misunderstanding of degrowth, it can cause a chain reaction of continued negative associations with the term on an unconscious level, making it difficult to change people's minds and attitudes about degrowth (Drews & Antal, 2016). Given this, they argue that a more positive-sounding slogan like "the good life" or "stable prosperity" might be better if the goal is to gather support for the movement (Drews & Antal, 2016). While a common argument in favour of the term degrowth is that it cannot be coopted like more positive-sounding terms (such as the ones suggested by Drews & Antal) (Fournier, 2008), these recommendations are nevertheless worthy of consideration given that misunderstandings of degrowth are still widespread.

2.2.3 Critiques of Degrowth

In addition to these contemporary discussions about the political feasibility and policy challenges of degrowth, there have also been more outright critiques of degrowth. Among some socialists, degrowth has been criticized for being politically untenable, for driving austerity politics, and for zeroing in on economic growth and consumption as opposed to capital accumulation and production. Schwartzman (2012), for example, argues that degrowth fails to fully engage with the qualitative differences between various forms of growth, suggesting that a solar and wind-powered economy would not face the same energy constraints as today, with the potential long-term potential to deliver "sustainable economic growth on a global scale" (p.124). Phillips (2019) equalizes degrowth with austerity and has argued that a degrowth path would effectively imply an "end to progress" (para. 22). In a similar vein, Huber (2019; 2021) argues that the degrowth movement represents the professional middle class's consumption guilt, and is therefore bound to fail to gather the working-class support needed to uproot capitalism. Huber (2021) and Phillips (2019) are both staunch proponents of socialist modernism and growth, maintaining that most people today live in precarity and thus need "more."

Another group that has offered many criticisms of degrowth is the ecomodernist camp. Ecomodernists have argued that green growth is, in fact, possible, exhibiting cases of relative decoupling in specific indicators, geographical areas and temporal zones and citing the potential of nuclear energy to provide cheap, abundant and low-carbon energy in the future (McAfee, 2019; Shellenberger, 2020). They accuse the degrowth literature of being against progress and modernity, and reason that people in the Global North will not accept the type of all-encompassing changes to society that degrowthers are proposing (Smith, 2021). While this group is distinct from the socialist modernists mentioned above, the ecomodernist critiques of degrowth nevertheless share many similarities with the socialist modernist camp. These are some examples

of the most common critiques of degrowth within and outside academia. While degrowthers take issue with many of these critiques, such as the claim that green growth is possible because instances of it have been observed in specific regions and indicators (Hickel & Kallis, 2020), these are nonetheless discussions that have come to influence the broader degrowth literature and movement.

2.1 Modern Monetary Theory

Modern Monetary Theory (MMT) is a macroeconomic theory that has recently entered the public debate on monetary and fiscal policy. MMT argues that the mainstream economic assumptions about currency sovereign governments' fiscal space are misguided (Kelton, 2020). MMT proponents refute the notion that monetary sovereign nations must raise taxes from the public or "borrow" from the private sector to spend (Ibid.). Instead, they contend that since the national state is the only institution with the legal authority to create the national currency, the currency must by logic originate from inside the state. As such, governments spend money into the economy *first* and impose taxes *second* (Wray, 1990). Whereas private households and other non-sovereign entities (like provincial and municipal governments) are *currency-users*, national governments are *currency-issuers* (Kelton, 2020). Therefore, monetary sovereign governments are not fiscally constrained in the same way that private households and non-sovereign governments are. From an MMT perspective, then, one of the critical functions of taxation is not to raise money to "pay for" things but rather to control inflation and ensure that the national currency remains publicly accepted (Ibid.).

While monetary sovereign nations do not face any *fiscal* constraints, MMTers note that they do face *resource* constraints, i.e., material, land, labour, capital, etc. (Kelton, 2020). If these resource constraints are surpassed, inflation will consequently arise, making inflation the real

limitation of any economy. Inflation is considered a limit because of the negative impacts it can have on people, such as reducing people's real purchasing power and contributing to economic instability and social distress (Kelton, 2020). Even though a fairly low inflation rate has been the goal of central banks in the past decades, approximately 2% per year, it should be noted that inflation impacts people differently, generating both winners and losers (Baumol et al., 2010). For example, inflation can have a redistributive effect, moving wealth from older and richer households (who typically are lenders) to younger middle-class households (who often are borrowers) (Doepke & Schneider, 2006). However, those who rely on incomes and/or wages that do not rise smoothly alongside inflation (e.g., pensions, scholarships, precarious work, etc.) tend to be worse off by inflationary episodes (Baumol et al., 2010). While noting that some inflation can be healthy for an economy—as long as wages rise concurrently—MMTers contend that the impacts of an uncontrolled rise in the general price level are undesirable as they translate to a real loss in people's purchasing power (Kelton, 2020).

The concept of monetary sovereignty is a key part of the MMT literature, but it is important to note that there is a considerable difference between nations in their level of monetary sovereignty. For a given nation to reach high monetary sovereignty, it would need to 1) print its own currency, 2) collect taxes and other liabilities in that same currency, 3) issue bonds only in the government's own currency (i.e., the government should not accrue debt in a foreign currency)[3], and 4) operate the currency in a flexible exchange rate system (Kaboub, 2015). As many countries do not neatly satisfy these criteria, MMT theorists have introduced the idea of a "spectrum of monetary sovereignty" (Kaboub, 2015; Tcherneva, 2016), which ranges from full

[3] If a government does accrue debt in a foreign currency, it becomes dependent on that country's currency until it has repaid its debt. MMTers caution against this as it can lead to a loss of monetary sovereignty. While this may not be a considerable problem for a country that has a high demand for its own currency, it becomes a larger problem for countries whose currencies are not in high demand globally.

monetary sovereignty (e.g., US, Canada, Japan, UK, Australia etc.), to no monetary sovereignty (Germany, Greece, Spain, etc.). Many Global South countries have low monetary sovereignty, despite often controlling their national currency, due to their subordinate position in the global monetary hierarchy (Tymoigne & Wray, 2013), which imposes substantial external constraints on their policy-making space[4] (Bonizzi et al., 2019). As such, there are considerable structural differences between countries in their ability to act on the insights of MMT—differences that are intertwined with colonialism and current neo-colonial institutions and patterns of trade (Gadha et al., 2021). These colonial dynamics highlight the value of the degrowth perspective and its emphasis on reducing the Global North's disproportionate portion of common global resources.

2.1.1 Historical and Intellectual Context

MMT has developed from a range of heterodox economic theories (Wray, 2020). An important influence on MMT is John Maynard Keynes' famous piece *The General Theory of Employment, Interest and Money* (2018; originally published in 1936). Among other insights, Keynes outlines a theory where governments play a crucial role in upholding aggregate demand through deficit spending during economic downturns, breaking with the conventional prioritization of "balancing" the government budget (Ibid.). The state theory of money (also called "chartalism") was also a major contribution to MMT, initiated by Georg Friedrich Knapp (1924; originally published in 1905). Knapp argued that money has no intrinsic value but rather gets its value from the institutional and legal context of the state (Knapp, 1924; Wray, 2007).

[4] While MMT scholars argue that countries with a high monetary sovereignty have more leverage power in the current system to implement policies, they also note that countries with a low monetary sovereignty also can do a lot to improve their own sovereignty by, e.g., prioritizing food and energy sovereignty, etc. (Kaboub, 2019; Samba Sylla, 2020).

MMT has also been influenced by the credit theory of money, associated with the economist Alfred Mitchell Innes. Innes (1914) refuted the, at the time, common-sense idea that money was a neutral "medium of exchange" that merely facilitates the exchange of commodities between different hands (barter). Innes (1914) argued that the fundamental nature of money is credit and debt relations, emphasizing that credit does not need to be backed by rare metals like silver or gold to be "real." Instead, credit can grow along with market activity, contradicting the idea that there is a fixed number of loanable funds that the public and private sectors must compete over (Wray, 2004) (what MMT theorists would call the "crowding-out" myth, see Kelton, 2020).

Moreover, the functional finance approach, spearheaded by Abba Lerner (1943) has also been paramount to MMT. Building on chartalism and the work of Keynes, Lerner similarly emphasized the role of the government in preventing economic downturns. However, Lerner went further than Keynes, arguing that government actions must be done "with an eye only to the results of these actions on the economy and not to any established traditional doctrine about what is sound or unsound" (Lerner, 1943, p. 39)—breaking with the idea of "sound finance," i.e., that governments must balance their budgets. Lerner reasoned that the fundamental objective of the government ought to be ensuring prosperity and proposed full employment as a policy objective through direct job creation (Lerner, 1944).

2.1.2 Contemporary Modern Monetary Theory

These intellectual debates and theories developed into the unified theory of MMT in the early 1990s (Mitchell, 2019). Since then, many different policy areas have been approached from an MMT perspective. Pavlina Tcherneva (2018, 2019, 2020) has focused on the job guarantee and adding to the Green New Deal debate, with a particular focus on the US context. Fadhel

Kaboub has focused his research on the political economy of the Middle East, and ways to achieve financial sovereignty in the Global South (Kaboub, 2015), and has recently entered the debate on the Global Green New Deal, pushing for colonial and climate reparations (Kaboub, 2020). Through her recent bestseller, *The Deficit Myth,* Stephanie Kelton (2020) has become one of the key communicators of MMT ideas, playing a pivotal role in pushing MMT ideas into the mainstream debate, particularly in the contemporary US political context.

2.1.3 Critiques of MMT

While the MMT framework is being increasingly discussed in the public sphere today, MMT still occupies a marginal position in policymaking and has been the target of criticism from a range of different actors. Bonizzi et al. (2019), for example, argue that MMT fails to adequately take into consideration the external constraints that limit development policy in developing and emerging economies, such as the hierarchal international monetary and financial system, making MMT of little use to current development policy discussions.

Another criticism of MMT concerns the legal and institutional challenges of following MMT insights given that the government and central bank often do not function as a single consolidated entity (Lavoie, 2013). For the post-Keynesian economist Marc Lavoie (2013), following MMT ideas would thus require "substantial reforms to existing laws and institutions" (p.23), which raises questions about the use of MMT insights for policy-making today. In response to this, MMTers have argued that while this is true, unveiling the voluntary nature of these self-imposed rules still serves a purpose, namely, to show that current rules and institutional arrangements do not represent some ultimate economic truth but are rather based on political and ideological positions and are changeable (W. Mitchell, 2016). Lavoie has been sympathetic to this response while maintaining the limits of using this approach in general terms

to inform policy (Lavoie, 2019). Other post-Keynesians like Palley (2015) have argued that MMT provides nothing new of value. He contends that MMT's insights on the ability of monetary sovereigns to finance deficits and on the different limits faced by sovereign governments and households "were all well understood by old Keynesians" (p.57) and thus should not be credited to MMT.

MMT has also received critique from the more mainstream economic sphere. Mankiw (2019), for example, worries that an MMT approach to deficit spending would spur inflation, expressing his confidence in the neoclassical quantity theory of money. Summers (2019) has perhaps offered one of the cruder critiques of MMT, referring to MMTers as a group of "fringe economists" with ideas that are "ludicrous" (Summers, 2019). He claims that MMT's ideas about money printing have already been tested in emerging economies and that this has led to hyperinflation and collapsing exchange rates (Summers, 2019). These critiques have been challenged by MMTers over the years in various mediums, though, Tymoigne (2021) recently published a cohesive rebuttal of many of these critiques in a single (albeit long) working paper. These discussions aside, MMT has nonetheless shed light on some thought-provoking macroeconomic insights and may be especially interesting for degrowthers, whose post-capitalist visions are politically and economically unthinkable from the perspective of orthodox economics.

2.4 Degrowth & Modern Monetary Theory

While the interactions between degrowth and MMT scholarship to date are rare, they do exist. Unti (2012, 2015, 2020) has done the most extensive work on connecting MMT and degrowth, predominantly through his work on the job guarantee, reasoning that the growth imperative could be weakened from an MMT lens and become a stepping stone for

transformative change. He contends that degrowth principles like low-productivity work and work time reduction could become a key part of a more sustainable job guarantee program, encouraging non-monetary benefits like free time, low stress and qualitatively meaningful work. In a recent book chapter, Alexander & Williams (2020) also discusses degrowth/post-growth from an MMT perspective, arguing that MMT is in a better position to describe modern economies than neoclassical economics and that MMT could serve to "greatly diminish" (p. 150) the growth imperative.

In a widely-read blog post, Jason Hickel (2020a) considers what an MMT lens could mean for degrowth, arguing that MMT constitutes an opportunity to break with the current growth imperatives and move towards a post-capitalist economy. Hickel (2020a) notes that MMT insights could be harnessed to generate public abundance through e.g., a job guarantee, universal public services and renewable energy, thus challenging the artificial scarcity that is so instrumental in upholding the growth imperative. In a recent paper, Bailey (2020) explores the "trilemma" (p.6) of moving beyond growth, and having an interventionist state, while maintaining the orthodox understanding of state financing by analyzing the MMT scholarship. He argues that the political economy of the state in a non-growing economy is "theoretically under-developed" (p.10), both in the post-growth and green state literature, and ought to connect better with heterodox economic frameworks like MMT.

In light of these new contributions and the recent surge in attention to MMT, investigating the synergies and tensions between degrowth and MMT, and whether there are opportunities for cross-fertilizations between the two schools, appears both timely and relevant. While MMT may bring strategic insights to degrowth, degrowth might be able to bring useful perspectives to the MMT scholarship on economic growth and ecological boundaries. In an

effort to explore these connections, this thesis will bring the degrowth and MMT scholarships into conversation with each other within the overarching normative goal of contributing to socio-ecological sustainability and justice.

3.0 Methodology

3.1 Theoretical Framework

This thesis is bringing the degrowth and MMT literature into conversation with each other, using an Ecological Political Economy (EPE) perspective. Craig (2016) describes EPE as a field of study that "highlights the 'socio-ecological relations' underpinning the societies that it analyses" (p.3), viewing the social and ecological as "ontologically inseparable" (p.3). As Harvey (1993) argued decades ago in what is considered a pioneering piece in the EPE field, any intervention or project in the political-economic sphere will ultimately shape the ecological sphere and vice versa. Central to EPE is the study of capitalism and economic growth and their interrelation with ecology. Noting the overlap with the field of political ecology, Craig (2016) explains EPE as a "particular manifestation" (p.4) of the broader field of political ecology.

An EPE perspective is useful as my thesis engages with broad and interdisciplinary topics relating to the dialectical relationship between the ecological sphere and the political economy. More specifically, an EPE lens will help me to analyze the underlying political-economic assumptions and prescriptions of degrowth and MMT, problematizing their positions on, economic growth, economic limits, work and value, and financing strategies. These political-economic assumptions and positions, in turn, have specific environmental outcomes (and vice versa). As Katz-Rosene & Paterson (2018) stress, rigorous EPE analyses need not only consider the ecological implications of various political-economic suppositions and prescriptions, but also the political-economic implications of different ecological claims and phenomena. Indeed, a conception of society that presumes infinite economic growth and the continuation of the capitalist mode of production will have rather different socio-ecological impacts from one centred around sufficiency, limits and socialist forms of production. At the same time, ecological

appeals for limits and sufficiency ought to consider the likely political-economic ramifications of such demands, such as the political and economic dilemmas involved in re-structuring the political economy towards one that, for example, does not require perpetual economic growth.

While a common approach in EPE analyses is to focus on specific empirical cases and phenomena to shed light on their political-economic and ecological implications, such as in Pineault's (2018) analysis of the socio-economic forces and ecological consequences surrounding hydrocarbon extraction within the Canadian economy, I take a slightly different approach in this thesis. I am using an EPE lens in a more theoretical fashion, zeroing in on the degrowth and MMT schools of thought specifically. However, given the broad nature of these literatures, I focus my analysis specifically on the ecological and political-economic implications of four separate but interlinked topics with distinct ecological and political-economic implications: economic growth, economic limits, work and value, and funding strategies. The two schools' positions and presuppositions around these four topics all yield diverse political-economic and ecological outcomes, making it a worthwhile undertaking to tease out these patterns of similarities and differences, and what might be learnt through a qualitative conversation between them.

What is characteristic of most EPE analyses, though, is a commitment to questions about power and inequality. As Carter (2020) notes, EPE researchers are interested in who benefits from resource extraction and who does not and who has the power to influence decisions and who is left out. By bringing the MMT and degrowth literature together in a conversation centred around the normative goal of socio-ecological justice and sustainability, I am placing questions about power, inequality and injustice at the forefront of this discussion. Carter (2020) further asserts that the EPE approach not only offers critical analyses of contemporary capitalism but

also attempts to contribute to possible alternatives, "seeking models of development that are both socially just and environmentally sustainable" (p.108). The intention of this thesis falls within this realm, i.e., to not only problematize the status quo but also to contribute toward possible alternatives. Thus, using an EPE lens, I critically examine the ecological political economy of degrowth and MMT, highlighting what a conversation between these schools of thought could mean for the overarching normative goal of socio-ecological justice and sustainability.

3.2 A Qualitative Thematic Document Analysis

As my main method, I employed a qualitative thematic document analysis, using secondary data from the degrowth and MMT literature (Elo et al., 2014). I examined the synergies and tensions between the degrowth and MMT literatures on the four interlinked topics alluded to above: economic growth, economic limits, work value, and funding strategies. In doing so, I also borrowed tools from the comparative literature to bring these two schools into a conversation. As Azarian (2011) notes, comparative research tools can be useful when "two or more cases are explicitly contrasted to each other regards to a specific phenomenon or along a certain dimension, in order to explore parallels and differences among the cases" (p.3). These methods and tools were used to investigate the relationship between degrowth and MMT, including the possible insights, parallels and differences that might emerge from such a conversation.

Drawing upon Jupille et al's. (2003) work on conceptualizing strategies for theory synthesis, this thesis also followed a "model of dialogue" approach that is called the "domain of application" (p.21). This domain of application model seeks a modest synthesis, whereby "each theory is specified independently and the result, if successful, is an additive theory that is more comprehensive than the separate theories." Following this broad strategy, the degrowth

and MMT school have each been considered independently before suggestions have been made about how their respective insights could be synthesized in a more comprehensive framework.

3.2.1 Data Selection

As a first step in the thematic document analysis, key academic and grey literature pieces from the degrowth and MMT school were chosen to represent each school's stance. This data collection consisted of reviewing the degrowth and MMT academic and grey literature and selecting samples of each school. A purposive sampling strategy was used to select the secondary data sources. Elo et al. (2014) state that "purposive sampling is suitable for qualitative studies where the researcher is interested in informants who have the best knowledge concerning the research topic" (p.4).

Of the many purposive sampling techniques, I used criterion sampling as my selection approach. After a broad scan of the degrowth and MMT literature, I formulated three inclusion criteria based on their relevance to this paper. The documents that were chosen had to be: 1) academic articles or books/book chapters or non-academic articles by key degrowth or MMT scholars; 2) written from a degrowth or MMT perspective; and 3) make references to some or several of the areas of interest to this study, including economic growth, limits, work and value, and funding strategies (though, documents that integrated several or all these key topics were favoured). These areas of interest were chosen, both due to their relevance in informing this paper's "problematique," and after finding these topics to be recurrent in both the degrowth and MMT literatures, thus creating the opportunity for a rich conversation between the two schools of thought. While an initial scan of the literature generated more documents, I limited the number of documents to 20 publications from each school of thought, i.e., 40 documents in total.

This list of documents can be found below in Table 1. These documents served as the basis for my thematic analysis.

Table 1

Selected Degrowth and MMT Documents

Degrowth	**Modern Monetary Theory**
1. *The Case for Degrowth* (Kallis et al., 2020)	1. "Debt and Deficits—A Modern Monetary Theory Perspective" (Mitchell, 2020)
2. *Less is More* (Hickel, 2020)	2. "How to Design and Pay for a Green New Deal" (Kaboub, 2021)
3. "The anti-colonial politics of degrowth" (Hickel, 2021)	3. "Sovereign Currency and Non-Sovereign Budgets: The Modern Money Theory Approach" (Wray, 2020)
4. "The Labor(s) of Degrowth" (Barca, 2019)	4. *The deficit myth* (Kelton, 2020)
5. "Household work and energy consumption: A degrowth perspective. Catalonia's case study" (D'Alisa & Cattaneo, 2013)	5. "An MMT response on what causes inflation" (Fullwiler, Grey, Tankus, 2019)
6. "Socially sustainable degrowth as a social–ecological transformation: repoliticizing sustainability" (Asara et al., 2015)	6. C*omplementary Currencies in the Solidarity Economy: The Local Job Guarantee* (Forstater, 2018)
7. "A tale of two utopias: Work in a post-growth world" (Mair, Druckman, Jackson, 2020)	7. "Modern Money Theory: A Reply to Palley" (Tymoigne & Wray, 2015)
8. "Degrowth" (Akbulut, 2021)	8. "Can we afford the Green New Deal?" (Nersisyan & Wray, 2021)
9. "A Green New Deal without Growth?" (Mastini et al., 2021)	9. "The High Costs of UBI are Not Financial: They are Real" (Tcherneva, 2019)
10. "The state in the transformation to a sustainable postgrowth economy" (Koch, 2020)	10. "Maximizing price stability in a monetary economy" (Mosler & Silipo, 2017)
11. "Commoning Care: Feminist Degrowth Visions for a Socio-Ecological Transformation" (Dengler & Lang, 2021)	11. *Reclaiming the State: A Progressive Vision of Sovereignty for a Post-Neoliberal World* (Mitchell & Fazi, 2017)
12. "Decolonizing technology and political ecology futures" (Paulson, 2021)	12. "The Job Guarantee: Design, Jobs, and Implementation" (Tcherneva, 2018)
13. "Degrowth and the State" (D'Alisa & Kallis, 2020)	13. *Economics for sustainable prosperity* (Hail, 2018)
14. "Limits, ecomodernism and degrowth" (Kallis, 2021)	14. "The Job Guarantee: Full Employment, Price Stability and Social Progress" (Ehnts & Höfgen, 2019)
15. "How to turn an ocean liner: a proposal for voluntary degrowth by redesigning money for sustainability, justice, and resilience" (Hornborg, 2017)	15. "Financial Stability, Regulatory Buffers, and Economic Growth: Some Postrecession Regulatory Implications" (Tymoigne, 2010)
16. "Should degrowth embrace the Job Guarantee?" (Alcott, 2013)	16. "An MMT perspective on macroeconomic policy space" (Armstrong, 2019)
17. *Towards a Society of Degrowth (Romano, 2019)*	17. "Public employment and environmental sustainability" (Forstater, 2003)

18. *MMT, post-growth economics, and avoiding collapse* (Alexander & Williams, 2020)	18. *The Job Guarantee and transformational Degrowth* (Unti, 2018)
19. "Degrowth and MMT: A thought experiment" (Hickel, 2020)	19. "The Fiscal Cliff Mythology and the Full Employment Alternative: An Affordable and Productive Plan" (Kaboub, 2013)
20. "Environmental justice, degrowth and post-capitalist futures" (Singh, 2019)	20. *Fighting Inequality Can Strengthen the US Economy* (Papadimitriou, Nikiforos, Zezza, 2019)

3.2.2 Data Analysis

The secondary data was then systematically analyzed, moving from what Erlingsson & Brysiewicz (2017) calls "manifest to latent content," (p.94), i.e., from text to categories, and lastly to broader themes. This process of systematic abstraction of the collected data was undertaken to make sense of large sets of texts, identifying potential patterns, similarities, disparities and relationships (Berg & Lune, 2017).

As a first step in this thematic document analysis, I searched for key passages in the chosen documents that made references to the overarching topics of interest to this study, i.e., economic growth, economic limits, work and value, and funding strategies and perspectives. In order to find these key passages, I looked for clues in the documents, zeroing in on the subtext and nuances within the text. On each topic, I asked questions like "what is emphasized and what is ignored?", "what is taken for granted and what is problematized?", and "on what grounds are such claims made?" to guide my search and analysis of the documents. This allowed me to critically engage with each text and tease out the passages of interest to this study. Following the theoretical guidance of Ecological Political Economy (EPE), I was particularly interested in how these schools of thought discussed the environment and the economy, and to what extent the dialectical relationship between the two was deliberated.

When I had identified and collected key passages that expressed positions on the overarching topics, I started to break down these passages further into categories and themes. The categories that expressed similar positions were grouped together under overarching themes,

allowing for an overview of the different positions expressed on each topic within the respective literature. This analytical process allowed me to identify some broader patterns within and between each school of thought, and to start teasing out the similarities and disparities. I continued this process of thematically analyzing degrowth and MMT documents in a comparative fashion around the four topics of interest to this study until no more ideas and insights were generated, i.e., "saturation" had been reached. At this point, I had analyzed about 20 documents from each school. This analytical process allowed me to consider possible synergies and tensions between the degrowth and MMT literature, as well as possibilities for cross-fertilization.

3.2.3 Limitations & Challenges

There are a few methodological limitations of this study that are worth noting. The degrowth and MMT documents selected do not represent an exhaustive list of all the various perspectives and discussions that exist within each school of thought. Both degrowth and MMT are broad schools that cover much more wide-ranging discussions than I have been able to cover here. Rather, the selected documents represent a snapshot of some of the most common perspectives and discussions, allowing for a broader indication of the schools' respective stances on the overarching themes of interest to this study.

Moreover, as I have used a purposive sampling approach to select the data, my own biases as a researcher should be noted. Purposive sampling techniques rely heavily on the researcher's judgment, which can be a weakness if not acknowledged (Creswell, 2013). To mitigate this, I have clarified my own researcher biases in the section below. By articulating my positionality within the research process, noting my known biases, assumptions, experiences etc. that could impact the study, the reader can better judge the accuracy and credibility of the study.

Similarly, qualitative thematic analysis relies upon the subjective interpretation of the raw data, which means that the findings of this study are unlikely to be reproducible. If this same study was undertaken by another researcher, it is likely that they would highlight other questions, themes and issues, depending on their subjectivity and life experience. While this does not necessarily make the findings of this study any less useful or important, it is still worth noting.

Additionally, when I analyzed the raw data, I noticed that there were sometimes discrepancies in the political-economic stance of the same scholar. Sometimes the same scholar expressed slightly different political-economic stances within the same document or in different documents. In these cases, I tried to look at the broad picture and convey the scholar's general perspective while noting the prevalence of these other stances as well. It is important to note that each scholar included in this analysis, and, indeed, each school, is far more complex and multifaceted than what can possibly be conveyed here. No scholar or school is a monolithic unit that operates without its own tensions, varieties or contradictions. I am not claiming to fully and comprehensively represent each scholar or school in this thesis. Rather, my goal has been to tease out general tendencies within and between these schools as it pertains to the environment and the economy.

3.2.4 The Position of the Researcher

Qualitative research, specifically, relies heavily on the researcher's own judgment, allowing the researcher to dig deep into complex phenomena. As noted decades ago by feminists such as Nancy Hartsock (1983), Patricia Hill Collins (1990) and Donna Haraway (1988), research and knowledge-production are always situated within the social world, with the values and experiences of the researcher being part of the research process and of knowledge production more broadly. The questions I ask and those that I overlook, the issues I dig deeper into and

those I disregard, and the results I find and those I miss are, to some extent, informed by my own experiences, assumptions and values.

Because of this, I will clarify some of my own values and perspectives that I believe could be pertinent to this research process. By noting my position in the research, the reader may be able to better judge the accuracy and credibility of the study (Creswell, 2013). I am writing from the perspective of a white female from a wealthy country in the Global North, Sweden, currently residing in Canada. I am also a degrowth activist and eco-socialist who identifies capitalism and growthism as key issues in allowing for a more socio-ecologically just and sustainable world. These are positions that have informed my research project, subject and questions. As my lived experience is limited to the Global North, I have decided to focus my attention on the Global North, while amplifying perspectives and insights from the South where I can.

3.3 Analytical Focus

The analytical focus of this thesis will be on Global North countries with a high monetary sovereignty. There are several reasons why I will focus on these economies specifically. Firstly, degrowth principles are particularly suitable for rich countries in the Global North as these tend to be highly resource-intensive economies that, from a socio-ecological justice lens, need to degrow (Hickel, 2020c; Hickel et al., 2022). Secondly, MMT insights are particularly powerful for monetary sovereign economies, many of which are resource-intensive countries in the Global North (Ibid.). In other words, both degrowth and MMT ideas are particularly relevant for monetary sovereign economies in the Global North, which makes it useful to focus on these economies in particular. Thirdly, as my lived experience is limited to the Global North context, I am in a better position to write about and consider these economies than other places in the

world. These reasons serve as the underlying rationale for the narrow focus on these specific economies.

4.0 Results

In this chapter, I convey the results of my analysis, which will be presented in four key sections: First, I describe the two schools' assumptions about economic growth, i.e., whether continued economic growth is presumed or problematized and if so, how and why. Secondly, I showcase how each school advances perspectives of economic limits—a category that concerns each school's presuppositions about resource use and policy space, as well as the ontological assumptions about scarcity and abundance that underpins these perspectives. Third, I outline each school's perspectives about work and value, which includes their respective discussions and underlying presuppositions about work and value, touching upon discussions on productivity, leisure, full employment, paid and unpaid work, and their respective policy propositions for how to change dominant understandings and approaches to work and value. Last is an analysis of each school's assumptions about how to finance and resource their respective policy proposals. An analytical section that discusses the synergies, tensions and possibilities for deeper cross-fertilizations between the degrowth and MMT school will follow each section.

4.1 Economic Growth

This section considers the degrowth and MMT schools' assumptions and perspectives about economic growth. This includes an examination of whether, to what extent and why the proponents of each school accept or problematize economic growth as a policy objective.

4.1.1 Degrowth

Degrowthers have written extensively on why economic growth is not a viable policy objective for high-income countries, grounded in ecological, socio-economic and cultural perspectives and critiques. The ecological critique is based on the materiality of GDP growth,

i.e., degrowthers note that economic growth is closely correlated with material growth and that this growth is bound to encounter limits, sooner or later (Hickel, 2020b; Kallis et al., 2020; Romano, 2019). As something that is material in nature, economic growth cannot continue to increase forever, at a compound rate, without causing ecological problems, such as pollution, climate change, biodiversity loss, etc. (Asara et al., 2015; Kallis et al., 2020). While increased efficiencies in various production processes are possible, degrowthers refute the idea that it is possible to decouple economic growth from ecological impacts entirely (Hickel & Kallis, 2020). Even the cleanest of renewables have their material footprints, and will in all likelihood continue to have that in the future (Hickel, 2020b; Kallis et al., 2020). Degrowthers argue that given the tight coupling between material and economic growth, the pursuit of compound economic growth comes with countless ecological problems, from climate change and biodiversity loss to soil degradation, pollution and excess waste (Kallis et al., 2020).

The socio-economic critique of economic growth in the degrowth literature is broad and includes insights from decolonial (Asara et al., 2015; Hickel, 2021; Paulson, 2021), feminist (Dengler & Lang, 2021; Paulson, 2021), Marxist (Akbulut, 2021; Barca, 2019), environmental justice (Singh, 2019) and well-being perspectives (Hickel, 2020b; Kallis et al., 2020). The socio-economic critique postulates that endless economic growth is not socially nor economically desirable, even if it was ecologically possible. For example, feminist scholars have problematized the patriarchal features of the growth paradigm. This critique includes the constructed divide and hierarchization between the paid and unpaid spheres, in which the former's perceived social and economic value comes at the expense of the latter (Barca, 2019; D'Alisa & Cattaneo, 2013; Dengler & Lang, 2021; Kallis et al., 2020; Paulson, 2021). As economic growth only encompasses the monetized sphere, economic growth, by definition,

ignores work in the unpaid sector, which predominantly is undertaken by women, racialized and marginalized people. The unpaid sector, then, is undervalued yet is a precondition for any form of increase in GDP in the monetized sphere. This does not, however, mean that degrowth feminists like Dengler and Lang (2021) suggest that the unpaid sphere ought to be brought into the monetized sphere. Rather, they argue that, for example, care work ought to be organized differently in the direction of emancipatory decommodification through commoning arrangements, transcending the patriarchal paid/unpaid division (Dengler & Lang, 2021).

Degrowthers have also argued that economic growth tends to exacerbate inequality and exploitation. They point out that most new income growth goes to the top socio-economic strata, leaving the poorest 60% globally with as little as 5% of all new income from the global growth (Kallis et al., 2020). These uneven dynamics spur the increasing financial and social gap between the wealthy and poor, allowing the richest to increase their power and ensure that their interests are maintained in the future. While economic growth typically is hailed as a necessity to eradicate poverty, degrowthers contend that growth is not needed to achieve this; rather, they argue that "growth is used as the excuse to not redistribute" (Kallis et al., 2020, p. 121). It is this lack of redistribution, they argue, that is the obstacle to eradicating poverty. Some degrowthers have gone even further and argued that maintaining poverty is a *prerequisite* for economic growth as it suppresses people's choices and ability to escape exploitative work conditions, keeping labour and other costs down—something that is key to maintaining capital accumulation and economic growth (Hickel, 2020b).

Yet another socio-economic critique of economic growth pertains to the well-being consequences of the pursuit of growth. Here, degrowthers draw from well-being studies, arguing that well-being only correlates with economic growth up to a certain point, after which this

relationship breaks down (Hickel, 2020b; Kallis et al., 2020). High quality of life need not high levels of GDP— rather, degrowthers note that there are countries in the world that score high on key indicators like health, education, employment, nutrition, social support, democracy and life satisfaction with only $10,000 per capita (Hickel, 2020b). What matters is not growth as such, but rather access to universal basic goods like clean water, healthcare, housing and food (Ibid.). Moreover, after a certain threshold, they argue, increases in GDP tend to *reduce* wellbeing, "create[ing] more illth than wealth" (Hickel, 2020b, p. 177). Some of these "illth" include stress, depression, loneliness, health-related illnesses due to poor nutrition, lack of exercise and pollution, sleep deprivation, and so on (Hickel, 2020b; Kallis et al., 2020).

The last socio-economic critique of economic growth concerns the colonial dimensions of growth economies. Degrowthers have emphasized the colonial characteristics of Northern growth economies, such as their reliance on exploitative power arrangements in which surplus value is extracted from "cheapened" labour and nature elsewhere (often the Global South) to sustain continued capital accumulation and economic growth in the Global North (Asara et al., 2015; Hickel, 2021; Paulson, 2021). They underscore that a disproportionate part of the ecological impacts of the pursuit of economic growth has been shifted away from their place of consumption (often in the Global North) to distant places and people (often in the Global South) where they are produced and later dumped as waste (Hickel, 2021). Degrowthers also contend that the pursuit of economic growth has played a key role in the North's appropriation of the atmosphere (Hickel, 2021). By releasing enormous amounts of CO_2 and other greenhouse gases (GHG) into the atmosphere, the North has effectively prevented other places and people to emit their "fair share" of GHGs which, in many cases, would contribute to meeting fundamental needs

(Hickel, 2021). These justice considerations also extend to concerns about the ability of future generations to live well within the Earth's regenerative capacity (Kallis et al., 2020).

Degrowthers also raise cultural critiques of economic growth. They contend that economic growth has become a hegemonic concept that is uncritically equated with progress and development, noting that this "universalizing" ideology has been violent and dominating, rendering other ontologies and epistemologies "backwards" or "lesser than" Western capitalist countries with high GDPs (Asara et al., 2015; Kallis et al., 2020; Paulson, 2021). For degrowthers, who connect their visions of the "good life" to Indigenous and non-indigenous cosmovisions such as *Buen Vivir* in South America, *Swaraj* in India, and *Ubuntu* in South Africa, the ideology of growth is seen as "less[ening] life" (Singh, 2019, p. 138), stripping it of its richness, diversity and complexity. This line of critique builds and connects with the post-development school of thought, which identifies degrowth as one alternative worldview among a pluriverse of others (Asara et al., 2015). Additionally, degrowthers understand economic growth as a key piece of the cultural hegemony of the capitalist system, serving as "the ideology of capitalism" (Hickel, 2021, p. 3), while having the ability to outlive capitalism (e.g., the ideology of growth could survive in a socialist system) (Akbulut, 2021). While the ecological, socio-economic and cultural critiques of growth have been separated here for analytical purposes, these critiques are interconnected and build upon each other in the degrowth literature.

4.1.2 Modern Monetary Theory

Contrastingly, the MMT literature, generally, takes economic growth as a common-sense objective. In most of the MMT literature, economic growth is described as a core part of a healthy economy (Ehnts & Höfgen, 2019; Kaboub, 2013; Kelton, 2020; W. Mitchell, 2020; Mosler & Silipo, 2017; Nersisyan & Wray, 2021; Papadimitriou et al., 2019; Tcherneva, 2018;

Wray, 2020). Nersisyan & Wray (2021) argue that society's economic potential is positively impacted by "robust" economic growth whereas "subpar" growth (p.79) has the opposite impact. If economic growth is interrupted for whatever reason, it ought to be "restored" or "stabilized" (Kelton, 2020; Tcherneva, 2018), often through the use of fiscal policy. MMT scholars frequently promote the job guarantee, emphasizing its potential in, among other things, producing "strong GDP growth" (Kaboub, 2013; Mosler & Silipo, 2017; Tcherneva, 2018, p. 9) and "stabiliz[ing] economic growth and prices" (Tcherneva, 2018, p. 7). While it has been noted in the MMT literature that economic growth is not *required* to meet the objective of full employment (Tymoigne & Wray, 2015), (i.e., full employment can be achieved irrespective of growth levels through the implementation of a job guarantee), this insight is rarely framed as a reason to move beyond growth but rather as an indicator of the efficacy of the job guarantee (though there are exceptions; see Hail, 2018; Unti, 2018).

Fiscal policy has a central role in the MMT literature, especially when it comes to "restoring" and "stabilizing" economic growth. For example, Mitchell (2020) notes that world economies were weak even before the COVID-19 pandemic hit due to the wrongheaded reliance on monetary policy and the objective of fiscal surpluses, causing "slower growth in output and productivity" (p. 566). Instead, Mitchell (2020) argues that fiscal support by the state is necessary to sustain both economic growth and jobs. Similarly, in an analysis of the European Central Bank's price stability prospects, Mosler & Silipo (2017) warn that the current reliance on monetary policy is "unlikely to bring the euro area out of the present sluggish growth rate" (p.22). They argue that an employed labour buffer stock policy (job guarantee) is superior to the current monetary policy, both in terms of ensuring price stability and spurring economic growth (Mosler & Silipo, 2017).

In much of the MMT literature, growing the economy and improving social outcomes are framed as joint endeavours (Kelton, 2020, p. 261). For example, through a job guarantee program, job creation is spurred, which feeds into higher economic growth, which leads to even higher job creation and growth, creating a virtuous cycle of employment and growth (Kelton, 2020; Wray, 2020, p. 46). Kelton (2020) and Papadimitriou et al. (2019) also argue that higher equality contributes to higher economic growth as poorer people have a higher propensity to consume in comparison to richer people, thereby spurring economic activity if granted additional spending capacity. Though the MMT literature is clear about the necessity to use regulation to ensure that economic growth does not disproportionately benefit the rich, which, they note, it has done historically (Kelton, 2020; Nersisyan & Wray, 2021).

For MMT theorists, idleness and economic inefficiencies are harmful to society, in part because they constrain economies' output prospects. Theorists of MMT refer to "labour underutilization" as a problem of inefficiency, leading to wastages and reductions in future output potential (Ehnts & Höfgen, 2019; Nersisyan & Wray, 2021). Mitchell (2020) similarly refers to labour underutilization as "wastage of labour resources" (p. 567), caused by low growth rates as well as contributing to future low growth rates (a vicious cycle). Instead, MMT theorists seem to strive for the efficient use of all available resources, the reinvestment of the surplus, and the subsequent increase in productive capacity (economic growth) (Ehnts & Höfgen, 2019; Kaboub, 2013; Kelton, 2020; W. Mitchell, 2020; Nersisyan & Wray, 2021).

Beyond establishing that economic growth is desirable, much of the MMT scholarship contends that spending injections from the government are *required* to uphold economic growth unless the country in question is a net exporter and receives some of its "injections" from abroad (Wray, 2020). But whether the injections come from the government, abroad, or both, injections

are nonetheless deemed necessary to uphold growth in capitalist economies (Ibid). Spending injections during economic stagnations is how MMT seeks to "tame the business cycle" inherent to capitalist economies (Kelton, 2020, p. 65). Influenced by the Keynesian school, spending injections are considered a temporary solution to capitalism's crises of overproduction, whereby the government intervene to uphold effective demand (Keynes, 2018, originally published 1936). Without government intervention, a crisis of overproduction would usually be followed by a period where capital and labour are devalued, which eventually brings back the conditions for accumulation and investment of surplus value and ultimately growth—though it leaves workers unemployed and vulnerable in the meantime. Instead of allowing this devaluation to occur by relying on monetary policy and a pool of unemployed labour, MMT theorists propose government spending injections into the economy through a job guarantee, which spurs consumption, absorbs the excess production, and enables continued economic growth (Kelton, 2020; Wray, 2020). For MMT theorists, then, who tend to take capitalism as a given, periodic governmental spending injections are key to stabilizing downturns and restoring growth in the economy.

However, even though economic growth has been taken for granted in much of the MMT literature, some MMT work has taken a more critical approach. For example, Eric Tymoigne (2010) has expressed some criticism of economic growth as the overarching objective in policy and finance. Investment-led economic growth has caused financial instability, he contends, both due to the economy becoming "too productive" (aggregate demand having difficulties soaking up excess supply), and because investment-led economic growth is highly prone to income-based and collateral-based Ponzi finance (causing risks of debt deflation and financial collapse). While noting that long-term sustainable economic growth may be "laudable as a concept" (Tymoigne,

2010, p. 25), he concludes that, in practice, this often leads to a "complete disregard for sustainability, not only in financial terms but also in socio-ecological terms" (p.25). He, therefore, welcomes less focus on economic growth as the key policy goal both due to financial sustainability concerns as well as worries about long-term socio-ecological sustainability (Tymoigne, 2010).

Similarly, Mitchell & Fazi (2017) make the argument that the aim should not be to grow all areas of the economy equally, but rather to expand demand in some areas, preferably "green" ones and that higher GDP growth is not necessarily better than lower GDP growth (Mitchell & Fazi, 2017). Forstater (2003) made similar remarks almost two decades ago when proposing a job guarantee program that could ensure both full employment and contribute to environmental sustainability.

Hail (2018) and Unti (2018) probably take the most critical positions on economic growth within the MMT literature. Hail (2018) argues that GDP growth is a poor measure of prosperity by pointing to the lacking relationship between additional GDP growth and wellbeing in high-income countries while noting that there continues to be a strong correlation between GDP growth and environmental degradation (pp. 259–260). Hail expresses an agnostic view on economic growth and asserts that an economy's level of GDP should be irrelevant. In his view, there is no intrinsic level of GDP that is "good" or "bad." Real GDP can be whatever is required to reach the societal objectives that are truly relevant: full employment and ecological sustainability (Hail, 2018). Though, he asserts that if there is ever a conflict between GDP growth and environmental sustainability, "only a fool would choose the former over the latter" (Hail, 2018, p. 261).

Similarly, Unti (2018) considers the pursuit of economic growth in Keynesian and MMT scholarship problematic for ecological and social reasons. He brings the degrowth literature into the conversation and argues for a job guarantee in the direction of degrowth (Ibid). Both Hail and Unti argue that a job guarantee has the potential to decouple economic growth from the objective of full employment and can serve as a tool for breaking the employment growth imperative (Hail, 2018; Unti, 2018). Here, Unti (2018) goes furthest and argues for a degrowth job guarantee in which lower productivity is an explicit policy goal, thus reducing economic activity while securing full employment.

While the work of Hail (2018) and Unti (2018) (and to some extent (Forstater, 2003; W. Mitchell & Fazi, 2017; Tymoigne, 2010), show that robust growth critiques have permeated the MMT literature, these contributions remain exceptions within the broader MMT scholarship (Armstrong, 2019; Ehnts & Höfgen, 2019; Kaboub, 2013; Kelton, 2020; W. Mitchell, 2020; Mosler & Silipo, 2017; Nersisyan & Wray, 2021; Papadimitriou et al., 2019; Tcherneva, 2019; Wray, 2020).

4.1.3 Analysis

On the topic of economic growth, there are some stark differences between the degrowth and MMT literature. Much of the MMT literature takes economic growth as a natural policy objective, equated with progress and economic health (Armstrong, 2019; Kaboub, 2013; Kelton, 2020; W. Mitchell, 2020; Mosler & Silipo, 2017; Nersisyan & Wray, 2021; Papadimitriou et al., 2019; Tcherneva, 2019; Wray, 2020). Indeed, most MMT scholarship is focused on using fiscal policy to stabilize the otherwise fluctuating nature of the capitalist business cycle, with the implied aim of restoring economic growth (Kelton, 2020; W. Mitchell, 2020; Nersisyan & Wray, 2021). Degrowthers, on the other hand, identify a range of problems with economic growth on

ecological, socio-economic and cultural grounds (Asara et al., 2015; Barca, 2019; Dengler & Lang, 2021; Hickel, 2020b). They argue that after a certain point (one which rich countries have passed long ago), there is a trade-off between economic growth and socio-ecological health, wellbeing and justice. What is required is not more growth, but rather a more equal society organized around meeting socio-ecological needs (Hickel, 2020b; Kallis et al., 2020). While some MMT theorists note that most economic growth has not benefitted those who need it the most, this is not considered a reason to question economic growth itself but rather a call for regulation to ensure that everyone can benefit from the growing pie (Kelton, 2020; Nersisyan & Wray, 2021).

As MMT theorists typically consider increased productive capacity a key part of a healthy economy, they denounce idleness and unproductivity on both economic and social grounds (Ehnts & Höfgen, 2019; W. Mitchell, 2020; Wray, 2020). Degrowth, on the other hand, embraces idleness and "dépense"[5] as ways to increase collective wellbeing and prevent the perpetual investment of economic surplus into the expansion of new production—thus breaking with some core components of capitalism (Kallis et al., 2020). Far from embracing idleness, much of the MMT school is concerned with not "wasting" labour and ensuring that the economy does not operate "below its capacity" as economic success is frequently framed in terms of productive capacity, which is presumed to translate into social prosperity (Ehnts & Höfgen, 2019; W. Mitchell, 2020; Wray, 2020).

However, despite this general acceptance of economic growth within the MMT literature, some MMT scholars have come to critically engage with the concept of economic growth, problematizing it on ecological, social and financial grounds (Forstater, 2003; Hail, 2018; W.

[5] Dépense refers to the unproductive and collective use of surplus that otherwise would be used to expand production.

Mitchell & Fazi, 2017; Tymoigne, 2010; Unti, 2018). They note the deficiencies of GDP in measuring what matters, that increased wellbeing and economic growth do not necessarily go together, and that social and ecological outcomes ought to be the relevant objectives for society—not a certain rate of economic growth (Hail, 2018; Mitchell & Fazi, 2017; Tymoigne, 2010; Unti, 2018). Though, except for Unti (2018) (who explicitly argues for degrowth), these scholars take a somewhat agnostic position on economic growth, neither embracing economic growth as a necessary good nor demanding a fundamental break from it. Similarly, there is also a tendency to limit the critique of economic growth to the necessity to grow green sectors and limit brown sectors (preferably through a job guarantee) (Hail, 2018; W. Mitchell & Fazi, 2017; Tymoigne, 2010), as opposed to problematizing the structural dynamics and forces that make reductions in aggregate economic growth difficult (or even impossible) within contemporary capitalism (Barca, 2019; Hickel, 2020b; Kallis et al., 2020).

As economic growth is closely coupled with ecological footprint, degrowthers emphasize that even growth in "green activities" have their ecological impacts and thus cannot grow forever. Thus, before an agnostic position can be taken on economic growth, the necessary changes to accommodate a non-growing economy must first be taken (Kallis et al., 2020). With the exception of Unti (2018) (and to some extent Hail (2018) there is a tendency within the growth-critical faction of MMT to overlook the limits to growth even in green sectors and the high probability that "growth agnosticism" leads to continued economic growth given the range of growth imperatives built into current societies and capitalism itself.

Despite the fact that most MMT work still takes economic growth as a common-sense objective, the existence of a growth-critical faction within the MMT scholarship indicates that

the soil might be fertile for deeper cross-fertilizations between the two schools on the topic of economic growth.

4.2 Limits within the Economy

This section focuses on the schools' respective interpretations and assumptions about limits to economic activity, including discussions around resource use, policy space, scarcity and abundance.

4.2.1 Degrowth

From a degrowth perspective, economic activity is limited by ecological limits in line with global socio-ecological justice (Akbulut, 2021; Alexander & Williams, 2020; Asara et al., 2015; Gómez-Baggethun, 2020; Hickel, 2020b; Kallis, 2021; Koch, 2020; Mair et al., 2020; Mastini et al., 2021; Romano, 2019). Degrowthers argue that the social and ecological costs of continued economic growth are so high that it becomes desirable to collectively form socio-cultural limits on economic activity in countries that exceed their global "fair share" of resource use in per capita terms (Hickel, 2020b; Kallis, 2021). Though, the setting of limits, they argue, must be a political process whereby people come together and deliberate these questions as part of a larger democratic project (Kallis, 2021).

In his work on limits, Kallis (2021) has argued that "we are not worried that [economic] growth has limits – we worry what will happen if we do not impose limits soon enough" (p.1). He argues that there are no external or "natural" limits to economic growth; rather, continued economic growth after a certain threshold is not deemed desirable and therefore warrants the *establishments* of limits (Akbulut, 2021; Asara et al., 2015). Similarly expressed by Asara et al. (2015): "limits to growth therefore become 'a social choice, not […] an external imperative for

environmental or other reasons'" (p.378). To be clear, this perspective is not a refutation of ecological boundaries, such as climate change, biodiversity loss, chemical pollution, etc. Rather, it seeks to re-frame limits as a relational concept by arguing that limits do not exist in a vacuum. As Kallis (2021) expresses: "Gravity, for instance, is a limit if you want to jump out of the window, but not if you want to stay on your couch" (p.1). If we want to keep our planet habitable, sustain biodiversity and breath clean air, then, it is desirable to collectively form limits.

Though, other degrowthers, such as Gómez-Baggethun (2020), have criticized this social constructionist framing of limits, arguing that ecological limits describe physical realities that have been empirically observable across various scales. While agreeing that ecological limits are flexible and may more often lead to "gradual change than sudden collapse" (Gómez-Baggethun, 2020, p. 2), he nevertheless cautions against the relativization of limits, arguing that it might play into the hands of business and elite power.

Whether ecological limits are framed as physical realities or as socially constructed and relational, all degrowthers agree on the necessity for rich countries to limit their material throughput to allow other areas of the world to meet their needs (Akbulut, 2021; Alexander & Williams, 2020; Asara et al., 2015; Gómez-Baggethun, 2020; Hickel, 2020b; Kallis, 2021; Koch, 2020; Mair et al., 2020; Mastini et al., 2021; Singh, 2019). By aiming to set limits on economic activity and resource extraction, degrowthers maintain that there already is enough for everyone to lead a good life—the fruits of the Earth are just not redistributed equitably enough (Akbulut, 2021; Hickel, 2020b; Kallis, 2021). By collectively establishing limits and sharing the Earth's wealth more equally, they argue, we can realize that the world is already abundant (Kallis, 2021). While many people certainly live under conditions of scarcity, degrowthers refute the idea that

this is a necessary or "natural" situation due to the world being inherently scarce but rather an outcome of specific political decisions and systems (Hickel, 2020b; Kallis, 2021). In this way, degrowthers connect the mainstream ontological perception of the world as inherently scarce with the "common sense" status of growth: economic growth becomes the "necessary" solution to scarcity (Kallis, 2021)—an idea particularly vibrant within both mainstream and heterodox economics fields.

For degrowthers, conditions of "poverty amidst plenty" is not only considered an outcome of capitalism but a condition for its continued reproduction (Hickel, 2020b). The ability of some to accumulate exorbitant excess is seen as relying on the exploitation and poverty of others elsewhere (Hickel, 2021). To move closer to global socio-ecological justice and sustainability, degrowthers argue that the Global North (in aggregate) must reduce its material throughput and upend its colonial patterns of unequal exchange between the South and North in line with what is fair in per capita terms (Asara et al., 2015; Dengler & Lang, 2021; Hickel, 2021; Kallis et al., 2020; Singh, 2019). Put differently, limits need to be formed in Global North economies to ensure the possibility of abundance for all, everywhere in the world. In this way, degrowthers view a common sense of limits in the North as a condition for justice in the South.

In addition to this emphasis on ecological limits, some degrowthers have, through recent engagements with MMT work, also started to discuss the role of inflation as a limit to economic activity and the distinction between budgetary and real resource limits (Alexander & Williams, 2020; Hickel, 2020a). Informed by the MMT lens, real resource limits, alongside ecological limits, are raised as the fundamental constraints that monetary sovereign economies must abide by (Alexander & Williams, 2020; Hickel, 2020a). This small branch of degrowth work has thus situated economies' real resource limits (as opposed to budgetary limits) within the broader

context of ecological limits, indicating that both these limits are important to consider when conducting policymaking in the context of socio-ecological sustainability and justice (Alexander & Williams, 2020; Hickel, 2020a). Though, this attention to real resource limits *in addition to* ecological limits is (so far) an exception within the broader degrowth literature.

4.2.2 Modern Monetary Theory

In their analyses of what limits economic activity and spending, the MMT literature puts considerable emphasis on the resources a given monetary sovereign nation has "access to" through its national currency, i.e., the real resources available for purchase in its currency (Kaboub, 2021; Kelton, 2020; Nersisyan & Wray, 2021; Tcherneva, 2019). A central focus of the MMT school of thought is the distinction between "real" and "artificial" limits to economic activity. The concept of "real limits" has to do with the economy's productive resources and capacity (Armstrong, 2019; Kaboub, 2021; Kelton, 2020; Nersisyan & Wray, 2021). If the economy is operating at its productive capacity, additional spending in the economy can manifest as inflation—the ultimate limit to economic activity (Kelton, 2020). Additional spending by the government at such a point would not serve productive ends but rather impair people's purchasing power. While the rate of "acceptable" inflation is rarely explicitly elaborated upon in the MMT literature, the commonly used 2% target tends to be adopted in their analyses[6]. Kelton (2020) defines productive resources as "the state of technology and the quantity and quality of its land, workers, factories, machines and other materials" (p.3-4). She further notes that "every economy has its own internal speed limit, regulated by the availability of our real productive

[6] MMTers sometimes bring up the problems of solely relying on one single inflation index, such as the traditional Consumer Price Index (CPI), underscoring that there are many ways to measure inflation (Kelton, 2020).

resources" (2020, pp. 3–4), implying that different economies have different limits that they must abide by.

For most MMTers, the "availability" of real resources is what limits economic activity. When the economy is at full employment, the economy is considered working at full capacity, whereby the meeting of additional demands might require producing less of something to "free up" resources elsewhere to prevent triggering inflation (Nersisyan & Wray, 2021). In a fully employed economy that operates at its capacity, MMT theorists recommend policy tools like "tax hikes and spending cuts" (Nersisyan & Wray, 2021, pp. 69–70) as well as "wage and price controls along with rationing" (p.82) to constrain aggregate demand and the competition for resources. If the economy is not at full employment, there is excess productive capacity in the economy (labour), and additional demands can likely be met without causing inflationary pressures (Nersisyan & Wray, 2021). However, Kaboub (2021) argues that productive capacity can always be expanded as "resources are producible" (p.52). He further notes that abusive price-setting by powerful market actors can also be a cause of inflation—an issue that can only be overcome by "taxing and regulating this corporate market power out of existence" (Kaboub, 2021, p. 52).

In contrast to the concept of "real limits," MMT describes "artificial limits" as limits that are self-imposed due to inadequate knowledge about how currency-sovereign economies function (Kelton, 2020; W. Mitchell, 2020; Wray, 2020). These are limits that are self-imposed based on the idea that currency-sovereign nations function as households and thus must meet certain budgetary outcomes (Kelton, 2020). These artificial limits are still guiding governmental policy decisions today, which, according to MMT theorists, leads to insufficient spending in the economy (Armstrong, 2019; W. Mitchell, 2020). They call these artificial limits "delusional and

unnecessary self-imposed" (Kelton, 2020, p. 4), and argue that the US has been "living below [their] means for two generations" (Nersisyan & Wray, 2021) as a consequence.

From an MMT standpoint, then, the limit to a monetary sovereign economy is its real resource constraints (not the size of its budget) which, if surpassed, demonstrates as inflation (Kelton, 2020). This framing of "available resources" as the ultimate limit to monetary sovereign nations leads many MMT analyses to conclude that monetary sovereign nations are running *below* their real capacity as there is excess labour in the economy. MMT theorists argue that if governments understood what the real limits were, they could avoid letting resources lie idle (labour, natural resources, capital, land, etc.) and instead deploy the available resources in ways that increase social prosperity (Ehnts & Höfgen, 2019; Kelton, 2020; W. Mitchell, 2020; Nersisyan & Wray, 2021). The closer a given economy can come to its real limits (i.e., its so-called internal speed limits), the better, as a higher level of production is considered better than a lower one (Ibid.). For MMT theorists, a truly abundant society is possible, but only if we correct our flawed understanding of the monetary system and stop "living below our means" (Nersisyan & Wray, 2021, p. 82).

However, the more ecologically concerned MMT faction also brings ecological limits into the conversation. In his work on a green job guarantee program, Forstater (2003) considered what jobs may "satisfy the biophysical conditions for a sustainable economy" (p.402), emphasizing that biophysical limits cannot be ignored. Similarly, Hail (2018) argues that the output required for the private sector to reach full employment may not be environmentally sustainable, pointing to the need for a universal job guarantee to be focused on "green activities" (p.240). He emphasizes that we must "live within our real and ecological constraints" (Hail, 2018, p. 253), ensuring that actions today do not prevent future generations from having a decent

life. Similarly, through his degrowth job guarantee proposal, Unti (2018) argues for incorporating ecological limits in the job guarantee proposal, putting full employment and ecological sustainability on equal footing. Mitchell & Fazi (2017) and Tymoigne (2010) also indicate the need to consider environmental limits when considering policies and jobs for a more sustainable economy. Thus, within these works, the inflationary/real resource limits that MMT typically emphasizes are considered *alongside* concerns for ecological limits. While this attention to environmental limits certainly can be found in the MMT literature, it cannot be said to permeate the school itself.

4.2.3 Analysis

While both the degrowth and MMT literatures draw connections between economic activity and resource limits, they do so in different ways. In most MMT discussions, resource limits are framed as a given economy's access to resources, such as labour, capital, machinery, land, tools, natural resources, etc.—resources that are employed through the use of the nation's sovereign currency (Kelton, 2020; Nersisyan & Wray, 2021). A given economy's "access to," or "availability of" resources is the main point of contention—not whether the economy's level of resource use is ecologically sustainable or socially just from a global perspective—which is what degrowth scholars tend to emphasize (Asara et al., 2015; Hickel, 2020b; Kallis, 2021). Most MMT work seems to take whatever resources a given economy can buy with its own currency without causing inflation as that country's "real" resource limits, or as Kelton (2020) frames it, its "internal speed limit" (p.3-4). Indeed, much of the MMT literature appears to overlook the possibility of exceeding ecological thresholds in the process of meeting what they define as an economy's "real" limits (Armstrong, 2019; Ehnts & Höfgen, 2019; Kelton, 2020; W. Mitchell, 2020; Nersisyan & Wray, 2021; Tcherneva, 2019; Wray, 2020).

Degrowthers, on the other hand, center the conversation of limits around global ecological sustainability and justice. From their perspective, the limits that a given economy must abide by are informed by its position as a climate and/or ecological debtor/creditor (Asara et al., 2015; Dengler & Lang, 2021; Hickel, 2021; Kallis et al., 2020). As countries in the Global North tend to be climate and ecological debtors, i.e., they have appropriated an unfair share of the planet's common wealth and are key drivers of the climate and ecological crisis (Hickel, 2020c; Hickel et al., 2022), they need to reduce their material throughput, whether or not they (according to the MMT lens) have the fiscal policy space to expand it. Indeed, degrowthers would argue that the resources that are available to monetary sovereign economies in the Global North exceed what is ecologically sustainable—not to speak about what is socially just in global and historical terms (Hickel, 2021). From a degrowth perspective, if monetary sovereign nations followed the insights of MMT without considering the global socio-ecological impacts of its actions, one might expect an increase in resource drain from the Global South, perpetuating serious social and ecological harms and injustices.

However, some MMT work has taken ecological considerations into account (though, to varying degrees) (Forstater, 2003; Hail, 2018; W. Mitchell & Fazi, 2017; Tymoigne, 2010; Unti, 2018), which indicate that there is some consideration for ecological limits alongside inflationary/real resource limits in the MMT literature. Yet, these analyses can only be found in a minority of MMT work (Ibid.). and it is unclear to what extent global ecological justice is considered, such as the need for economies to stay within *their* respective "fair shares" of global resources—not just within global ecological limits in aggregate.[7] Furthermore, they do not

[7] For example, even if the world, in aggregate, would succeed in staying within ecological boundaries, it is still possible that some countries would continue to grossly overshoot their share of emissions and resource use, at the expense of other countries who are forced to compensate for them. Indeed, this is a highly likely scenario given the

acknowledge the possibility of increased ecological drain from the South to the North as a consequence of MMT's insights.

Similarly, degrowthers do not usually reflect upon inflationary limits and the distinction between budgetary and real limits (Akbulut, 2021; Asara et al., 2015; Gómez-Baggethun, 2020; Hickel, 2020b; Kallis, 2021), but these considerations could be of value to their policy discussions alongside their current emphasis on ecological limits. By deprioritizing perceived budgetary constraints and instead centring their debates around the resources necessary for their policies, degrowthers might be in a better position to defend their policies and visions. While there has been some recent attention to inflationary/real resource limits alongside ecological limits in the degrowth literature (Alexander & Williams, 2020; Hickel, 2020a), this is not a common position in the broader degrowth literature.

Thus, when comparing degrowth and MMT's conceptions of limits, it becomes clear that they both have some blind spots. When considering limits to economies, much of the MMT literature only take into account inflationary/real resource limits (Armstrong, 2019; Ehnts & Höfgen, 2019; Kelton, 2020; W. Mitchell, 2020; Nersisyan & Wray, 2021; Tcherneva, 2019; Wray, 2020), overlooking the possibility that a given economy is already surpassing ecological limits—a blind spot that risk causing additional climate and ecological harm and injustices unless fully recognized. Even though it is certainly more insightful to frame limits on economic activity around the availability of resources than that of available finances (as MMT does), there is also a need to be critical about what causes some economies to have higher "internal speed limits" than others (Kelton, 2020, pp. 3–4) and why we might perpetuate these injustices if we do not integrate these considerations into our analyses. Moreover, the portion of work that

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structural injustices in the current economic system and is already being practiced today, e.g., through Global North emission offsetting schemes in the Global South.

incorporates both inflationary/real resource limits and ecological limits in their work (to varying degrees) illustrates that there is a body of work that uses both growth-critical and MMT insights on limits in their analyses (Alexander & Williams, 2020; Forstater, 2003; Hail, 2018; Hickel, 2020a; W. Mitchell & Fazi, 2017; Tymoigne, 2010; Unti, 2018). Through more intentional engagements between the degrowth and MMT schools on these topics, these conversations could be further expanded.

4.3 Work & Value

This section considers degrowth and MMT's discussions and underlying assumptions about work and value. This includes their discussions around productivity, leisure, full employment, paid and unpaid work, and their respective policy propositions for how to change dominant approaches to work and value.

4.3.1 Degrowth

The degrowth school of thought puts considerable emphasis on re-imagining the institution of work. This involves a shift away from productivist, capitalist and patriarchal work ideals, institutions and goals that reward stressful, high risk and exploitative work, in favour of slower, intentional and more socio-ecologically useful and meaningful undertakings (D'Alisa & Cattaneo, 2013; Dengler & Lang, 2021; Hickel, 2020b; Kallis et al., 2020; Mair et al., 2020; Romano, 2019; Singh, 2019). Degrowthers argue that capitalist work arrangements and norms contribute to the current consumerist, unequal and wasteful societies, and thus need to be radically transformed (Hickel, 2020b; Kallis et al., 2020).

One part of this envisioned transformation concerns a change in institutions, norms and values around productivity and leisure. Degrowthers denounce over-work norms and cultures

that glamourize “the grind,” general busyness and high-productivity ideals and instead promote new norms centered upon care(ful), slow and intentional ways of life and work (Kallis et al., 2020; Mair et al., 2020). Leisure and low-productivity work are considered important ways to both increase the collective wellbeing of people and nature, and to prevent the perpetual investment of economic surplus into the expansion of new production (Kallis et al., 2020; Mair et al., 2020; Romano, 2019). For degrowthers, “dépense” is a keyword: it refers to the unproductive yet meaningful collective expenditure of surplus that otherwise would be used to expand production (Romano, 2019). Some examples of dépense are taking a nap, going for a bike ride, organizing a feast with friends, etc.—activities that are undertaken for their pure enjoyment rather than productive ends. Though, Barca (2019) argues that it is key that the use of the surplus is built upon “a truly democratic decision-making process” (p.3), whereby workers are de-alienated and connected with the fruits of their labour. In this way, worker control, autonomy and economic democracy can be fostered, allowing for work and its surplus to be centred around social wellbeing as opposed to increased productivity and growth (Barca, 2019).

Degrowth also seeks to break with the hierarchy between paid and unpaid work. Drawing upon the more extensive field of feminist scholarship on work, value and the environment (Agarwal, 1992; Mies, 1986; Waring, 1988), degrowthers denounce the capitalist and patriarchal hierarchization of work, whereby the paid work sphere is valued and recognized on the backs of the unpaid, invisibilized and undervalued unpaid sphere (D’Alisa & Cattaneo, 2013; Dengler & Lang, 2021; Kallis et al., 2020). Degrowth feminists are trying to move beyond this dichotomization of work (paid/unpaid)—but not merely by moving unpaid work under the logic of wage work. They argue that monetizing unpaid work is rarely an emancipatory approach, for social *and* ecological reasons. When monetized, women and racialized people typically continue

to be the ones undertaking such work, without any fundamental changes in the status or valuation of it (Dengler & Lang, 2021). The monetization of unpaid work also tends to put pressure on efficiency and profitability where time and patience are needed (Dengler & Lang, 2021) while causing more intensive energy use (D'Alisa & Cattaneo, 2013). Rather, degrowthers seek a gender-just redistribution of all forms of work by promoting work-sharing, work-time reduction in the paid sphere, and the building of work and provisioning systems that lie outside of the paid and unpaid spheres, such as the commons (D'Alisa & Cattaneo, 2013; Dengler & Lang, 2021). They argue that this approach can contribute to more equal divisions of care work between genders and transcend the current dichotomy between the monetized economy and the invisibilized economy (Dengler & Lang, 2021). When hypothesizing what such caring commons could look like, they draw inspiration from community-based solidary health-care systems and commonized childcare and schooling arrangements, etc. (Dengler & Lang, 2021).

Building upon these visions of work, degrowthers have promoted a range of policies to transform work and how it is valued. For example, they have proposed a universal basic income/care income (Akbulut, 2021; Asara et al., 2015; D'Alisa & Kallis, 2020; Hickel, 2020b; Kallis et al., 2020; Koch, 2020; Mair et al., 2020; Mastini et al., 2021), job guarantee (Alcott, 2013; Asara et al., 2015; Hickel, 2020b; Mastini et al., 2021), work time reduction and work-sharing proposals (Akbulut, 2021; Asara et al., 2015; D'Alisa & Kallis, 2020, 2020; Dengler & Lang, 2021; Hickel, 2020b; Kallis et al., 2020; Koch, 2020; Mastini et al., 2021). For degrowthers, different mixes of these policies can ensure that people's needs are met despite a reduction in economic activity while nurturing alternative values and norms around work (Hickel, 2020b; Kallis et al., 2020). As workers transfer from sunset sectors to greener ones, degrowthers maintain that there must be measures in place to ensure that workers' livelihoods

are sustained (Barca, 2019; Hickel, 2020b; Kallis et al., 2020; Mastini et al., 2021). In order to ensure that this transition remains just, they argue that workers and labour unions ought to be at the negotiating table, building the foundations of a "truly democratic, worker-controlled production system" (Barca, 2019, p. 209; Mastini et al., 2021).

Degrowthers see much potential in policies that center work around socio-ecological objectives rather than capital accumulation and growth, as well as foster long-term values and norms built upon care, the commons and conviviality (Alcott, 2013; Dengler & Lang, 2021; Kallis et al., 2020; Mastini et al., 2021). For example, a job guarantee that is funded at the national level but implemented locally could bring people into the process of democratically deciding what work is needed in their communities, no matter whether the market deems it "profitable" or not (Alcott, 2013; Mastini et al., 2021). Degrowthers also put significant attention on the care economy, which includes highly gendered work, such as caring for people, communities and environments (D'Alisa & Cattaneo, 2013; Dengler & Lang, 2021; Kallis et al., 2020). They underscore the importance of the reproductive sector and advocate for a job guarantee centred around "activities with high social value, such as care work, habitat restoration, and community services" (Mastini et al., 2021, p. 7).

As a way of promoting commoning provisioning systems and acknowledging the unpaid work that is undertaken every day, by predominantly women, racialized and marginalized people, without remuneration, degrowthers also advocate for a basic income/care income policy (Dengler & Lang, 2021; Kallis et al., 2020). Basic income policies are also noted for their ability to remove some forms of coercion associated with work, enabling people to "demand better working conditions and to form new ways of working" (Mair et al., 2020, p. 7), while reducing productivity and growth. The decoupling of material security from paid work is also posed as a

solution to the fact that many socially useful jobs "will not coincide with market work" (Mair et al., 2020, p. 8), reducing the need to undertake so-called "bullshit jobs" (Graeber, 2018) to make ends meet. Through such measures, degrowthers see potential in nurturing alternative values, spaces and activities, including non-capitalist modes of knowing and being (Kallis et al., 2020). With the expansion of non-monetized spheres centred around "voluntary and convivial activity and autonomy" (Asara et al., 2015, p. 378), such as community involvement, leisure activities and caring for others—alternative values, people and societies could be (re)produced (Kallis et al., 2020). For degrowthers, then, the transformation of work itself has the potential to be a critical component in meeting social and ecological objectives, but also in the reproduction of people and societies with values drastically different from today's capitalist, productivist and growth-centric ones.

4.3.2 Modern Monetary Theory

The topic of work also has a central role in the MMT literature. Much of the MMT literature discusses the goal of full employment, and the prospects of reaching this objective through a job guarantee (Ehnts & Höfgen, 2019; Forstater, 2003; Hail, 2018; Kaboub, 2013, 2021; Kelton, 2020; Tcherneva, 2018; Unti, 2018). MMTers emphasize that people should have the right to a decent job with a liveable wage, particularly as paid work is the main way for people to participate in society. Because the current economic system does not provide enough jobs to accommodate everyone who wants one, they view the job guarantee policy as an important tool for securing the objective of full employment, while ensuring price stability (Ehnts & Höfgen, 2019; Kelton, 2020; Tcherneva, 2018).

MMTers criticize the widely accepted theoretical concept within mainstream economics called the NAIRU curve (Non-Accelerating Inflation Rate of Unemployment) which presumes

that there is an inevitable trade-off between inflation and unemployment (Mankiw, 2018). According to the NAIRU curve, it is not possible to achieve both full employment and low inflation; full employment is believed to cause excessive aggregate demand in the economy, spurring inflation, whereas a low inflation environment is believed to cause insufficient demand, instigating high unemployment and misery. Finding the sweet spot between these two "necessary evils" (inflation and unemployment) is the best decision-makers can do, according to mainstream economics theory (Mankiw, 2018).

However, MMTers oppose the idea that unemployment is an inevitability and rather maintain that it is a policy choice (Kelton, 2020; Tcherneva, 2019). They argue that the government, as a monetary sovereign, should take the role as the employer of last resort, employing anyone who is looking for work in socially useful sectors (Kelton, 2020; Tcherneva, 2019). As the job guarantee pool of workers expands during recessions (as private-sector workers are laid off) and decreases during booms (as people leave the job guarantee program to enter higher-paying jobs), the job guarantee is considered an "automatic stabilizer" of the economy that adjusts spending counter-cyclically (Kelton, 2020; Mitchell, 2020; Nersisyan & Wray, 2021; Tymoigne & Wray, 2015). In this way, the job guarantee is assumed to have a stabilizing effect on the "inevitable" business cycle, maintaining effective demand during busts and preventing inflation during booms while securing people's livelihoods (Kelton, 2020, p. 65; Mitchell, 2020).

The job guarantee is also noted for its prospects of meeting social and environmental objectives and needs in the communities they take place within. What these needs are is not to be defined in a top-down fashion but rather through a bottom-up process whereby the communities

themselves are involved in collectively outlining areas of needed work[8] (Kelton, 2020). MMT theorists underscore the job guarantee's potential in helping underserved communities, focusing on public services like care work, green projects and food production (Forstater, 2003, 2018; Hail, 2018; W. Mitchell & Fazi, 2017; Tcherneva, 2019; Unti, 2018). Importantly, the job guarantee is set to meet workers where they are, meaning that workers' previous skillsets and aspirations are matched with the jobs that are needed (Kelton, 2020). Thus, in addition to meeting macro-economic objectives, the job guarantee is noted for its potential in reducing economic inequality, creating green jobs and promoting the care economy (Hail, 2018; Kelton, 2020; Nersisyan & Wray, 2021; Wray, 2020).

In addition to meeting social and environmental objectives, the job guarantee is noted for its ability to prevent wastages of unemployed labour by engaging all available labour resources, securing higher output and labour productivity (Ehnts & Höfgen, 2019; Kaboub, 2013, 2021; W. Mitchell, 2020; Tcherneva, 2018; Wray, 2020). This is considered an important feature of the job guarantee as idleness and "labour underutilization" (W. Mitchell, 2020, p. 3) is considered undesirable, causing unproductive use of resources, waste and "lost output" (Tcherneva, 2018, p. 14). Perhaps Wray (2020) expresses this position most clearly: "Our most valuable resource—labor—cannot be simply stored for later use; for the most part, whatever we do not use now is lost forever, and its future potential can even be degraded by idleness today" (p.47). For MMTers, then, the efficient and productive use of all labour resources is important, with the presumption being that it is beneficial to society at large.

MMT theorists perspective on the utility of full employment also lead them to denounce policies like the UBI. Tcherneva (2019b) argues that a UBI would be inflationary as it only

[8] More information about the practical details of a job guarantee program can be found in Pavlina Tcherneva's extensive work on the job guarantee program (Tcherneva, 2018, 2019b, 2020).

produces the finances—not the "output" (in contrast to the job guarantee which does both). She argues that the fiscal stimulus alongside the probable labour withdrawal is likely to push inflation up, thus failing to empower the workers whom the UBI is intended to benefit (Tcherneva, 2018, 2019b). Mitchell & Fazi (2017) similarly contend that a deficit funded UBI would lack any inflation anchor and would thus likely cause inflation. As more people are "supported in real terms by the production of others" (Mitchell & Fazi, 2017, p. 229), there will be less supply to go around for the level of demand caused by the UBI. Ehnts & Höfgen (2019) similarly argue that the UBI "entirely neglects the production side" (p.61), creating uncertainties about how the goods and services that the UBI seeks to purchase will be produced. The UBI, then, in contrast to the job guarantee, is expected to cause lower productivity, more idleness and labour wastages, and inflationary pressures—all considered undesirable outcomes.

Moreover, MMTers have also raised concerns about the impacts of UBI on people's mental health. Hail (2018) argues that proponents of UBI policies view people as "consumption machines" (p.220), failing to recognize the role that paid work takes in securing people's mental health and sense of purpose. Mitchell & Fazi (2017) similarly worry about the stigma associated with unemployment and unconditional income transfers like a UBI, noting that a job guarantee is in a better position than the UBI to benefit people's mental health. For MMTers, then, the UBI is a failed solution to the problems of unemployment and wellbeing, inferior to paid work and the job guarantee (Ehnts & Höfgen, 2019; Hail, 2018; W. Mitchell & Fazi, 2017; Tcherneva, 2018).

While most MMT work takes higher labour utilization, productivity and output as common-sense objectives of work, some MMT contributions put more emphasis on going beyond dominant conceptions of work. Unti (2018) advances a low-productivity job guarantee with a reduced working week, intended to reorient production from profit and exchange value

towards the satisfaction of needs and use values. For Unti (2018), capitalism's inherent drive for increased productivity and growth compromises people's livelihoods and hurts the environment, making low-productivity work desirable.

Moreover, Forstater (2018) has advanced a local job guarantee proposal funded by a local complementary currency, noting that such a project would have a range of local and environmental benefits in addition to the ones associated with the federal job guarantee, including re-evaluating what constitutes valuable work and experimenting with non-capitalist social organizations. Mitchell & Fazi (2017) has also discussed the possibility of expanding the notion of work through the job guarantee, arguing that work in the future could come to involve things like, playing music, organizing a community garden or undertaking activism. However, they note that such changes in norms are likely to take time to develop. Thus, while most of the MMT discussions on work revolve around the objective of full employment through a job guarantee, with the underlying assumptions that high labour utilization, productivity and output are desirable goals, some MMT discussions go beyond this by expanding ideas about what constitutes valuable work.

4.3.3 Analysis

There are both synergies and tensions between the MMT and degrowth schools on the topic of work and value. While the degrowth school puts significant attention on re-imagining work and discussing ways to move beyond current work norms and institutions (D'Alisa & Cattaneo, 2013; Dengler & Lang, 2021; Hickel, 2020b; Kallis et al., 2020; Mair et al., 2020; Romano, 2019; Singh, 2019), the MMT school largely centers the conversation around the utility of full employment, labour productivity and paid work (Ehnts & Höfgen, 2019; Forstater, 2003; Hail, 2018; Kaboub, 2013, 2021; Kelton, 2020; Tcherneva, 2018). These differences illustrate

some deep-seated ontological differences between the schools around productivism, leisure and what "counts" as work. For example, as degrowthers are seeking a slower and less resource-intensive economy, they think that leisure and "unproductive" uses of economic surplus can be desirable activities (Kallis et al., 2020; Mair et al., 2020; Romano, 2019). They oppose the utilitarian logic so common within the economics field, arguing that there are many other ways to organize and exist in our societies, beyond narrow conceptions about rational self-interest and maximization of utility. MMTers, on the other hand, largely denounce idleness and labour wastage on the grounds that this is inefficient, causing lower output and productivity, which is assumed to reduce society's prosperity (Ehnts & Höfgen, 2019; Kaboub, 2013, 2021; Kelton, 2020; Tcherneva, 2018). These are differences that are hard to reconcile.

Another difference concerns their respective presuppositions about what "counts" as work. MMT mostly consider work in the context of paid wage work, illustrated by their sole focus on the job guarantee proposal and, to some extent, dismissal of the UBI (Hail, 2018; Kelton, 2020; W. Mitchell & Fazi, 2017; Tcherneva, 2018). When discussing work and value, degrowthers contrastingly focus on both paid and unpaid work and discuss the possibilities of expanding provisioning systems that go beyond the paid/unpaid work divide (D'Alisa & Cattaneo, 2013; Dengler & Lang, 2021; Kallis et al., 2020). Degrowthers view the UBI as a way to compensate those whose work is currently unrecognized, to expand spaces for non-wage work arrangements, and to remove the current coercion logic of work. Therefore, degrowth supports the proposal for a UBI/care income *alongside* a job guarantee. While the MMT literature discuss the value of the unpaid sector and highlight the ways that the job guarantee can be centred on care work (Ehnts & Höfgen, 2019; Kelton, 2020), their sole solution to the undervaluation of care work is to place it under the logic of wage work. This would mean that unpaid work is only

"recognized" or "valued" if it is brought under the logic of wage-work through a job guarantee. While degrowthers also support a job guarantee centered on care work, they caution against this as the sole approach given that it would likely serve to further monetize social relations while doing little to challenge the undervaluation of care work on a more fundamental level (Dengler & Lang, 2021).

Moreover, MMTers sole focus on the job guarantee also raises questions about the long-term valuation of care work. If the job guarantee was centered on care work, this work would likely only be temporarily recognized (during economic downturns) as the job guarantee pool of workers would then decrease again during economic booms. During economic booms, workers would transfer back to higher paying jobs unless they decide to stay in the job guarantee, in which case it no longer becomes a macroeconomic stabilizer. After all, the reason why the job guarantee can function as a macroeconomic stabilizer is because the job guarantee pool of workers shrinks and expands countercyclically. This implies that the unpaid sector might be temporarily "recognized" during downturns, to then return to being ignored, invisibilized and feminized when the economy stabilizes[9]. Contrastingly, degrowthers envision a more foundational re-evaluation of unpaid work by expanding commoning arrangements alongside a general reduction in paid work hours (Dengler & Lang, 2021; Kallis et al., 2020). Clearly, there are some stark differences between the two schools on the topic of paid and unpaid work.

Despite these tensions between the degrowth and MMT schools on the topic of work and value, there are also some synergies worth noting. They both see value in a job guarantee policy and in expanding sectors of the economy centered on meeting socio-ecological needs, as opposed

[9] While Tcherneva (2018) notes that these jobs could be established permanently outside of the job guarantee if people do not want to leave them, it is still unclear whether such changes would lead to any real impacts on the continued undervaluation and feminization of care work, especially as care work is already being undervalued and under-paid in the paid work sphere today.

to adhering to the market-logic of private profit. Indeed, they both emphasize the need to expand jobs in sectors that are currently overlooked, such as in green sectors and in the care economy at large. Moreover, there is also a tendency among some MMTers to push for a deeper re-conceptualization of paid work, particularly Unti (2018) who argues for a job guarantee centered on low-productivity work and on use values rather than exchange values, but also Forstater (2018) and Mitchell & Fazi (2017) who both encourage alternative non-capitalist work arrangements. Though, whereas MMTers seem to be entirely focused on the re-conceptualization of paid work, specifically, degrowth seek to re-imagine all forms of work.

Thus, when comparing and contrasting the degrowth and MMT literature, one can note that MMT overlooks much of the work that lies outside of the formal paid work sphere, and merely recognizes such work when it is brought under the logic of wage work, such as in the case of a job guarantee that is centered on care work. The implicit gendered ramifications of their disproportionate focus on the paid sphere are areas that the MMT scholarship, to some extent, overlooks. Here, degrowthers have argued that a UBI/care income, alongside a job guarantee, can serve this purpose. While MMTers certainly bring useful perspectives to the UBI discussion, e.g., the possible worries of inflation (which degrowthers may benefit from considering in more detail), they do not discuss the value of a care income in recognition of the unpaid work that must be undertaken every day for society to function. The MMT school may thus benefit from giving more attention to how unpaid work, such as cooking, cleaning, caring for people and nature, can be valued without turning it into wage work.

4.4 Funding Strategies & Perspectives

This section considers how each school of thought intends to finance their respective policies and visions and the underlying assumptions going into these propositions and perspectives.

4.4.1 Degrowth

The primary ways that the degrowth school seeks to finance their visions and policies in the absence of economic growth is by redirecting funds from social and environmental "bads" and through progressive taxation, green taxes and wealth/income caps (Hickel, 2020b; Kallis et al., 2020; Koch, 2020; Mastini et al., 2021). For degrowthers, the lowest-hanging fruit is to stop subsidizing sectors that are socially and ecologically damaging to society, such as the fossil fuel industry, the military-industrial complex, etc., thereby releasing funds for more socially and ecologically desirable endeavours (Kallis et al., 2020; Mastini et al., 2021). Progressive taxation, green taxes and wealth/income caps are other policies that are framed as financing mechanisms with a double dividend—they raise funds that can be used for funding degrowth policies while also reducing overall inequality (Kallis et al., 2020; Mastini et al., 2021). For example, Kallis et al. (2020) argue that a moderate tax increase for the richest in OECD countries could fund a UBI and that eliminating two-thirds of the UK's tax breaks could fund a Universal Basic Service (UBS) policy (p.70).

Degrowthers also propose sovereign money creation and a sovereign money system to fund its policies. Instead of private banks creating money as debt every time they grant loans to the public—and collecting large profits in the process—a sovereign money system would entail public banks taking over this operation by issuing money debt-free towards the public good (Hickel, 2020b; Kallis et al., 2020; Mastini et al., 2021). Part of the reason why many

degrowthers consider debt-free money to be crucial is because the interest accrued to repay private debts is thought to generate a monetary growth imperative[10] (Kallis et al., 2020; Mastini et al., 2021).

Some other funding mechanisms have also been brought up in the degrowth literature. For example, Kallis et al. (2020) have considered the possibility of governments issuing green bonds that are later paid back through "arrangements that do not require the economy as a whole to grow" (p.69). However, what these arrangements might be are not further elaborated upon. Though, Mastini et al. (2021) express concerns about the reliance on green bonds and deficit spending, arguing that "it relies on economic growth to avoid ballooning public debt" (p.6). Yet another funding approach is the issuance of community currencies, whereby a local currency is used within a specific geographical area to spur local provisioning systems (Hornborg, 2017; Kallis et al., 2020; Mastini et al., 2021).

Recently, however, a couple of degrowth scholars have engaged with the MMT literature (Alexander & Williams, 2020; Hickel, 2020a), aligning themselves with MMT's perspective on government financing. They underscore the use of seeing monetary sovereign governments as currency issuers rather than users and note that this could weaken some growth imperatives and facilitate the implementation of degrowth policies (Alexander & Williams, 2020; Hickel, 2020a). Though, this currency-issuer perspective has not (yet) permeated the broader degrowth literature.

4.4.2 Modern Monetary Theory

As already noted, the MMT school argues that monetary sovereign governments are not fiscally constrained in the same way that private households and non-sovereign governments are.

[10] Though, there have been some discussions about whether bank-issued debt-money really does generate a growth imperative, with some ecological economists arguing that a stationary economy is compatible with debt-money and positive interest rates as long as the interest rates remain in circulation in the economy, see: (Cahen-Fourot & Lavoie, 2016).

Therefore, they refute the notion that monetary sovereign nations must raise taxes from the public or "borrow" from the private sector to spend (Armstrong, 2019; Ehnts & Höfgen, 2019; Forstater, 2003; Hail, 2018; Kaboub, 2013; Kelton, 2020; Tcherneva, 2018; Unti, 2018). As MMTers argue that governments spend money into the economy first and impose taxes second, they maintain that the government can always fund their policies; what matters is whether the government can access the necessary resources to turn a policy into material reality (Armstrong, 2019; Ehnts & Höfgen, 2019; Hail, 2018; Kelton, 2020; W. Mitchell, 2020).

Therefore, when proposing a policy like the job guarantee or a Green New Deal (GND), MMT scholars focus on the likely resource demands of these policies (the material, land, labour, capital, etc.), not the amount it will cost in financial terms (Kelton, 2020; Nersisyan & Wray, 2021; Tcherneva, 2019). For example, in their analysis of the resource costs of a GND[11] in the US, Nersisyan & Wray (2021) estimate the "resources the GND will require, weighing those against resources it will release plus what is already in excess supply" (p.68). Using this approach, they find that the net resource cost of a GND would only be 1.3% of current GDP (Nersisyan & Wray, 2021). While acknowledging the uncertainty involved in estimating resource costs this way, they maintain that this approach provides a much better indication of the true costs of a GND than the mainstream approach does (where only financial costs are considered) (Nersisyan & Wray, 2021).

To mitigate potential inflationary pressures of policies, MMTers suggest the coordination of spending with targeted taxes, thus creating enough fiscal space for the intended policies. In order to offset the resources necessary for a given policy, the MMT school favours taxing those who are likely to spend their income (i.e., middle class and if necessary, lower income groups)

[11] In Nersisyan & Wray's paper, a GND includes, among other things, a job guarantee, various "greening" projects, Medicare for all, the end of forever wars, taxation of the rich, etc. (Nersisyan & Wray, 2021).

(Kelton, 2020; Nersisyan & Wray, 2021). As the wealthiest part of the population have a lower propensity to consume than less wealthy people (Kelton, 2020), MMTers note that wealth and income taxes are unlikely to free up enough resources unless they are sufficiently high, which they see as politically challenging (Nersisyan & Wray, 2021). While wealth and income taxes are favoured in the MMT literature, MMT scholars contend that such policies should be raised on their own terms (because inequality is bad), not because we need the wealthy's money to fund the policies we want or that we expect to free up enough resources by doing so (Kelton, 2020; Nersisyan & Wray, 2021).

A less common approach to "financing" policies in the MMT literature is Forstater's (2018) proposal of complementary currencies. He has advanced a local job guarantee proposal that builds upon the complementary currency literature in recognition of the political, administrative, and legislative obstacles in the way of realizing a national job guarantee. One way of circumventing this, Forstater (2018) suggests, is by implementing a local job guarantee, funded by a local complementary currency. In this way, cities or states/provinces would become issuers of the complementary currency while still being users of the national currency. Though, the same underlying logic as with the national currency still applies: are there resources available to absorb the issued complementary currency? Ultimately, whether in the context of a national currency or a complementary currency issued locally, MMTers center the funding conversation on how to resource policies and undertakings, as opposed to how to finance them (Ehnts & Höfgen, 2019; Forstater, 2018; Hail, 2018; Kelton, 2020; W. Mitchell, 2020; Nersisyan & Wray, 2021).

4.4.3 Analysis

There are some considerable differences between the degrowth and MMT literature on the topic of financing strategies. Whereas the degrowth scholarship tends to focus on the financial costs of policies through a range of different financing policies, including wealth, income and green taxes, shifting spending from "bads" to "goods," sovereign money creation and complementary currencies (Hickel, 2020b; Kallis et al., 2020; Koch, 2020; Mastini et al., 2021) (with a couple of recent exceptions: Alexander & Williams, 2020; Hickel, 2020a), the MMT scholarship emphasizes that what matters is the cost in real terms, i.e., the real resources necessary to implement a given policy without disrupting price stability (Hail, 2018; Kelton, 2020; W. Mitchell & Fazi, 2017; Tcherneva, 2019). MMTers point out that for monetary sovereign nations, finding the money is not the problem—the difficulty is making sure that a given economy has the real resources needed to meet its objectives. MMT scholars argue that we are better equipped to understand the true costs and benefits of policies, and indeed the real limits to economies if we think about how to resource them rather than how to finance them (Kelton, 2020). While there may be legal, institutional and political obstacles to applying such a framework in practice (Forstater, 2018) (and additional barriers apply depending on the country's level of monetary sovereignty), MMT scholars nevertheless emphasize that their lens sheds light on the "real" costs of policies.

The way the degrowth school currently frames the financing question reveals an interesting paradox: while the degrowth school is founded upon the notion that the environment is fundamental to any economic activity, this material lens is strangely absent from most of their discussions on financing. After all, money can lay claims on resources, but as expressed by Nersisyan & Wray (2021): "finance cannot help if we do not have enough resources" (p.84). While this may seem almost too obvious to state, it is evidently not obvious enough since most

degrowth analyses of the "costs" of implementing policies only consider the financial costs, overlooking the resources upon which they ultimately seek to lay claim. As such, from the MMT lens, degrowth's financing strategies have the wrong focus as they are mostly centered on funds rather than resources. However, some degrowthers have started to think as currency issuers rather than currency users (Alexander & Williams, 2020; Hickel, 2020a), noting that this shift in mindset could be particularly useful for degrowth and their aim of moving beyond the reliance on economic growth as a funding strategy. These emerging connections illustrate that cross-fertilizations between the two schools are already happening, albeit at the margins.

Thus, by moving the conversation from how to "finance" policies to how to "resource" them, MMT appears to have some useful insights to offer degrowth. Indeed, rather than framing their financing discussions around how to "find the money," degrowthers would likely benefit from putting more effort into framing the challenge as one that ultimately is about resources and their distribution. Given that some degrowth scholars have already started to engage with MMT's insights on governmental spending (Alexander & Williams, 2020; Hickel, 2020a), the soil may be fertile for further discussions that embrace this MMT lens.

4.5 Opportunities for Cross-fertilization

In this preliminary conversation between the degrowth and MMT literature, some of the synergies and tensions between the two scholarships have, hopefully, become palpable. As shown throughout the analysis above, there are tensions between the degrowth and MMT schools regarding their underlying assumptions about economic growth, economic limits, work and value, and financing strategies. Though it has also become evident that there are synergies between the two literatures as well, with some work incorporating features of both the degrowth

and MMT scholarship. These cross-fertilizations are emerging at the boundary of each school, a body of work I will refer to as the "Degrowth-MMT Nexus" (see Table 2).

Table 2

Synergies & Tensions between Degrowth & MMT

	Degrowth	**MMT**	**Degrowth-MMT Nexus**
Economic growth	Against growth as an objective; manage without growth	Pro-growth; growth agnostic; manage without growth	Against growth as an objective; manage without growth; growth agnostic
Limits	Ecological limits; socio-ecological justice	Inflation limits; ecological limits	Ecological limits; socio-ecological justice; inflation limits
Work & Value	Expanding the notion of work; move beyond paid/unpaid divide; against productivism; job guarantee; work-time reduction (in paid work); basic income/care income	Full employment; job guarantee; against labour wastage; productivism; care economy; expanding the notion of paid work	Expanding the notion of work; full employment; beyond productivism; job guarantee; work-time reduction (in paid work); basic income/care income
Funding strategies & perspectives	Focus on "financing"; wealth/income/environmental taxation; green bonds; sovereign money creation; complementary currencies	Focus on "resourcing"; currency issued by national state; complementary currencies; free up resources through deflationary policies like taxation and regulation	Focus on "resourcing"; currency issued by national state; complementary currencies; free up resources through deflationary policies like taxation and regulation

Note: This table summarizes the findings in the previous analyses and conceptually develops the body of work at the boundary of each school, here called the "Degrowth-MMT Nexus."

In light of this brief conversation between the degrowth and MMT literature, some of the key opportunities for cross-fertilization between the two schools of thought will be considered. The first opportunity for interaction concerns the limited growth-criticism within the MMT literature. Given the extensive empirical evidence showing that continued economic growth is

not a viable strategy for a socio-ecologically sustainable and just world (Haberl et al., 2020; Parrique et al., 2019; Wiedenhofer et al., 2020), it is unfortunate that leading MMT economists continue to perpetuate the hegemony of growth through much of their work (Ehnts & Höfgen, 2019; Kaboub, 2013; Kelton, 2020; W. Mitchell, 2020; Mosler & Silipo, 2017; Nersisyan & Wray, 2021; Papadimitriou et al., 2019; Tcherneva, 2018; Wray, 2020). While it is promising that there are voices within MMT that have raised criticism of economic growth as an overarching goal (Forstater, 2003; Hail, 2018; W. Mitchell & Fazi, 2017; Tymoigne, 2010; Unti, 2018), these critiques are not commonplace within MMT, i.e., they can be found in the occasional MMT analysis but is not given the attention one may expect given the strong correlation between GDP and environmental degradation. Additionally, some of these growth critiques are quite superficial, with the focus restricted to the limits of GDP as a concept or the need to move from "brown" to "green" jobs through a job guarantee. These are still important critiques, and they do go further than much mainstream economic work, but they are still deeply insufficient if we are to take the empirical evidence on the socio-ecological dangers of continued economic growth seriously (Haberl et al., 2020; Parrique et al., 2019; Wiedenhofer et al., 2020). In order to strengthen and expand their ecological lens, the MMT scholarship would benefit from engaging more with degrowth/growth-critical perspectives.

The second opportunity for connection is that MMT might benefit from degrowth's perspectives on ecological limits and global socio-ecological justice in their discussions about limits. From an MMT perspective, as long as a given national economy is not already at full employment, there are excess resources lying idle in the economy (Armstrong, 2019; Kelton, 2020). The government can purchase the excess labour using its sovereign currency, ideally through a job guarantee, and expand the economy's productive capacity. The government can

also use its sovereign currency to purchase the materials, goods and services that it needs from elsewhere in the world to achieve its objectives. Indeed, MMTers argue that monetary sovereign governments can always purchase whatever is for sale in their own currency and thus need not impose limits due to fiscal concerns (Armstrong, 2019; Kelton, 2020). While MMT, quite insightfully, centres the conversation around the resources required for a given policy or project (not the finances needed), frequently absent from these discussions is any recognition of the injustice implications of Global North countries (many of which have high monetary sovereignty) pursuing their so-called "real" resource limits.

From a degrowth perspective, it is not sufficient to solely ask whether a given government can *resource* a given policy—they must also ask whether and how they can do so justly and sustainably. As most countries with high monetary sovereignty in the Global North are on the receiving end of continued colonial resource drain from the Global South (Dorninger et al., 2021; Hickel, 2020c; Hickel et al., 2021, 2022), it would be problematic if countries in the Global North, with their newfound MMT insights, increased their social metabolism. While MMT merely points out what monetary sovereign nations can do in the current global political economy, the MMT lens, alone, has the potential to aggravate current socio-ecological injustices unless a common sense of limits is fostered in monetary sovereign nations in the Global North. It is noteworthy that these possible negative impacts of MMT insights are not more widely acknowledged and discussed in the MMT literature. While some MMT work has taken ecological limits into account (though, to varying degrees) (Forstater, 2003; Hail, 2018; W. Mitchell & Fazi, 2017; Tymoigne, 2010; Unti, 2018), they constitute a minority. It also remains unclear to what extent global ecological justice is considered. They also do not raise the possibility of increased ecological degradation as a consequence of MMT insights. Therefore, the

MMT scholarship might benefit from engaging with degrowth's emphasis on ecological limits from a global justice perspective, allowing them to see that while monetary sovereign nations may be imposing artificial limits on their spending currently, most of them are *also* using resources far beyond what is ecologically sustainable and fair.

The third opportunity for interaction concerns degrowth and MMT's different perspectives on the job guarantee and the UBI. While MMT makes many useful contributions to the job guarantee discussion, they fail to consider the use of a UBI alongside a job guarantee in recognition of the unpaid care work that is needed to maintain society and that may benefit from not being turned into wage labour. The degrowth literature has proposed a care income for this specific reason (Kallis et al., 2020), and cautions against efforts that seek to monetize unpaid work as a solution to its invisibilization and undervaluation and rather propose the removal of more work and life from the logic of paid work and exchange value (D'Alisa & Cattaneo, 2013; Dengler & Lang, 2021). As most of MMT's critiques of the UBI do not consider these eco-feminist perspectives, MMT might benefit from engaging with them before opposing the UBI. While these eco-feminist perspective certainly do not originate within degrowth[12], they are nevertheless critiques and visions that are a key part of degrowth today (Dengler & Lang, 2021).

The fourth opportunity for further cross-fertilizations concerns MMT's perspective on funding and real resource limits, and the implications this could have for the degrowth school. While degrowthers tend to frame their funding discussions around how to find the money to "pay for" their policies, MMT has shown that monetary sovereign nations can always fund their policies—what matters is whether there are enough real resources available. This insight could

[12] Eco-feminists and feminist economists have made foundational contributions to the degrowth scholarship's analysis and perspectives on the economy, gender and the environment, see (Gregoratti & Raphael, 2019) for a historical overview and (Agarwal, 1992; Mies, 1986; Waring, 1988) for their influential work on these questions.

be useful for the degrowth school as they seek to move beyond the idea of economic growth as a key funding strategy. Indeed, if taxes are not needed to fund the government's activities, the government can directly fund various public endeavours, without having to first grow the economy to collect the necessary funds, which could serve to break several key growth imperatives (Alexander & Williams, 2020; Hickel, 2020a). The MMT lens, then, could (in theory) serve as a tool for the implementation of degrowth policies, with governments funding public goods directly instead of relying on aggregate growth in the economy, while using deflationary policies to free up resources when and where necessary. Given that this insight has already started to make inroads within the degrowth literature (Alexander & Williams, 2020; Hickel, 2020a), the soil may be fertile for deeper connections and discussions.

5.0 Discussion

In light of the findings of the previous chapter, i.e., that there are opportunities for further cross-fertilization between degrowth and MMT, I will now turn to discuss such opportunities in a bit more detail in the context of socio-ecological justice and sustainability. More specifically, I will consider how degrowth and MMT ideas around economic limits could be combined to create a more ecologically robust conception of monetary sovereign governments' policy space while remaining cognizant of the limitations and challenges of such an approach. The insights from the previous chapter will thus be furthered here in the form of a thought-experiment.

5.1 The Degrowth-MMT Nexus: Policy Space

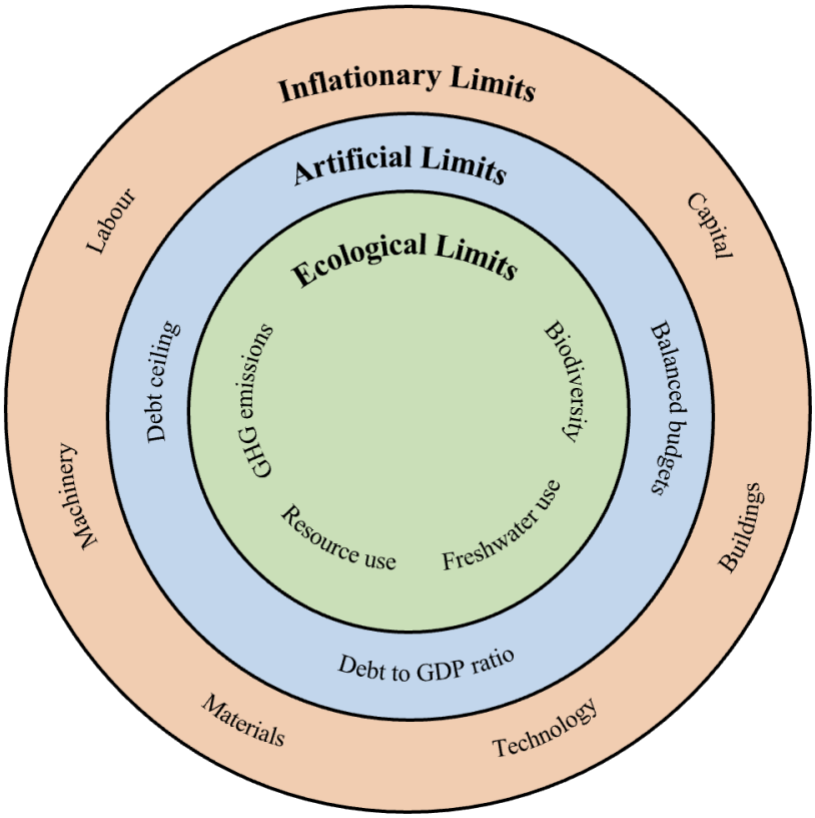
From an MMT lens, monetary sovereign governments' policy space is much larger than previously thought as these economies are not restricted in financial terms, only in resource terms (Kelton, 2020; W. Mitchell, 2020; Nersisyan & Wray, 2021). These economies have been constraining themselves—not out of necessity—but rather due to a flawed understanding of monetary sovereign governments' real policy space (Ibid.). Much of the MMT literature is concerned about having these economies realize their "real" limits, which are identified as being more expansive than current "artificial" limits.

However, from a degrowth perspective of policy space, economies that are ecological and climate debtors (i.e., countries that have used an unfair share of the globe's common resources) are currently living beyond their resource means and thus ought to degrow their economies in line with ecological limits and fair shares (Hickel, 2020b; Kallis et al., 2020). As many countries with high monetary sovereignty (e.g., the US, UK, Canada, and Japan) also are climate and ecological debtors (Hickel, 2020c; Hickel et al., 2022), there is a worry that these countries may exacerbate current patterns of resource drain and appropriation of atmospheric commons from

the Global South if they only consider inflationary limits as the constraining factor to economic activity. That is, while many of the countries with a high monetary sovereignty may be imposing artificial limits on their economies today, they are still living beyond their ecological limits, which suggests that if they were to only abide by inflationary limits, additional ecological degradation would be a likely result. For a conceptual illustration of this conundrum, see Figure 1 below.

Figure 1

The Likely Position of Inflationary, Artificial and Ecological Limits



Note: This figure conceptually illustrates the different limits faced by monetary sovereign governments in the Global North and where they are likely to be found in relation to each other. As many monetary sovereign nations' artificial limits exceed ecological limits, their inflationary limits are likely to further exceed ecological limits. Though, it should be noted that while monetary sovereign nations' inflationary and artificial limits are likely to be found outside of their ecological limits, this need not necessarily be the case.

Yet, in isolation, degrowthers' perspective on policy space is also flawed, at least in countries with high monetary sovereignty. Degrowthers have argued that measures must be undertaken to allow societies to function without growth, e.g., by implementing a job guarantee, UBI, UBS, etc., enabling an equitable reduction of material throughput over time, in line with global ecological limits and justice (Hickel, 2020b; Kallis et al., 2020; Mastini et al., 2021). However, as noted earlier, these policies are often raised from the perspective of governments as currency users rather than issuers. Indeed, the degrowth literature has tended to reinforce this perception by focusing on how policies can be financed (Hickel, 2020b; Kallis et al., 2020; Koch, 2020; Mastini et al., 2021), as opposed to how they can be resourced. This is a problem, not only because it limits the discussion about what society can afford, but also because this approach may cause unnecessary inflation and/or continued ecological degradation as the "pay for" measures suggested by degrowthers may not offset their policies in real terms. For example, while a moderate wealth tax on the wealthiest 1% may free up the finances necessary to "pay for" a UBI, it is not obvious that it would free up the resources needed for it.

As such, both MMT and degrowth might benefit from incorporating each other's perspectives on policy space in their respective analysis. This approach could combine MMT's attention to inflationary limits with degrowth's concern for ecological limits and the need for materially intensive countries to degrow their economies while scrapping artificial limits entirely. Indeed, both inflationary and ecological limits are useful when conceptualizing a given economy's policy space. However, in isolation, each perspective is likely to miss other vital parameters.

As such, using degrowth and MMT insights, I will now turn to consider how these ideas could be used in a more concrete sense to guide our conception of what a more ecologically just

and sustainable policy space might encompass. Returning to this paper's "problematique," most societies today rely on economic growth to meet key welfare objectives, to the detriment of both people and the environment. As degrowthers have argued, current societies' dependency on economic growth is ecologically and socially detrimental, and there is now extensive empirical evidence supporting this view (Haberl et al., 2020; Parrique et al., 2019; Wiedenhofer et al., 2020). Given that current capitalist societies fall into recessions if economic growth comes to a halt, causing widespread social despair, degrowthers have argued that societies need to implement policies that can contribute to a decoupling between human welfare and economic growth, allowing people to sustain themselves while economies contract and stagnate (Hickel, 2020b; Kallis et al., 2020; Koch, 2020). One policy program that might be able to facilitate a decoupling between human welfare and economic growth and that has been taken up by both degrowthers and MMTers is the Green New Deal (GND). While degrowthers and MMTers have advanced different versions of the GND, they all support some form of large-scale program that targets both social and environmental ills.

Among MMT theorists, the GND discussion has mostly had a national focus, particularly concentrating on the US context[13]. The policies proposed as part of a GND include healthcare for all, infrastructure programs to "green" the economy, and a federal job guarantee which would include a range of green and low-carbon public projects, e.g., retrofitting of houses, developing carbon-neutral energy, providing care work, creating fire and flood prevention infrastructure, etc. (Kelton, 2020; Nersisyan & Wray, 2021; Tcherneva, 2019; Wray, 2020). These policies are typically raised in the MMT literature, but it is not a comprehensive list. When discussing the prospects of the GND, the MMT literature tends to echo growth ideology, idealizing the so-

[13] However, there are exceptions, see: (Kaboub, 2020).

called “Golden Era of capitalism” and the prospects of returning to it through a GND (Nersisyan & Wray, 2021, p. 70). While the post-war era did see improved social and economic outcomes in the Global North, it also contributed massively to the environmental and climate crises we see today, suggesting the need to pay attention to the global environmental consequences of another big spending program.

Degrowthers have been skeptical of the more “mainstream” GND programs and instead endorsed more radical ones. Some degrowthers were part of designing and influencing the Green New Deal for Europe campaign and program[14] (Adler & Wargan, 2019). A GND without growth has also been proposed in the degrowth academic literature (Mastini et al., 2021). Some of the policies proposed by degrowthers as part of a GND package are a UBI/care income, a maximum income/wealth caps, universal basic services, a job guarantee, environmental caps and bans, environmental tax reform, work sharing, etc. (Adler & Wargan, 2019; Mastini et al., 2021). For degrowthers, these policies are seen as key in moving society off the growth wagon, allowing all people to have the material security needed no matter what happens to growth while building a more environmentally sustainable and just economy. Moreover, degrowthers note that a GND in the North that is genuinely just requires a reduction of resource and energy use in the Global North, allowing the Global South to meet their needs within the planetary boundaries (Hickel, 2021; Mastini et al., 2021). Degrowthers’ GND is thus framed as a toolbox for decarbonizing the economy and as a way of dismantling the growth paradigm while meeting global socio-ecological justice and sustainability objectives.

Undeniably, degrowthers and MMTers have proposed GNDs that differ in their scope and objectives. Nevertheless, each school has theoretical contributions to make around the

[14] Not to be confused with the “European Green Deal,” a mainstream GND proposal by the EU that endorses green growth.

question of what constitutes an ecologically just and sustainable policy space—insights that could inform their respective GND debates. Using the GND as an example, I will now contemplate whether and how a GND could fit inside an ecologically just and sustainable policy space in monetary sovereign economies, using degrowth and MMT insights. The intention of this thought-experiment is not to sketch out the specific form a GND ought to take (i.e., the exact policies it should include and how) but rather to offer some guidelines in terms of the policy space needed for a GND. Based on this, I will make some broad recommendations for what type of policies *could* be included in a GND, while noting that any such program ought to be grounded in public opinion and be specific to the social-ecological context within which it is to be implemented.

5.2 A Thought-experiment: An Ecologically Just & Sustainable Policy Space

So, can monetary sovereign countries in the Global North afford a GND? Countries with a high monetary sovereignty, e.g., the US, the UK, Canada, Japan, etc., face no immediate financial constraints on their abilities to implement a GND. As already indicated, the real question concerns whether they have the ecological space to implement a GND from an ecological sustainability and justice perspective. As many of these economies (e.g., US, UK, Canada and Japan) are climate and resource debtors, i.e., they have used an unfair share of global emissions and resources, they ought to (from a degrowth perspective) reduce their material throughput.

Therefore, before a specific type of GND is implemented, an ecological analysis must be undertaken that considers whether this type of GND is likely to increase or decrease these economies' material throughput, in the long run. The attention to the long-run impacts is key here as many of the needed socio-technical changes to accommodate a more sustainable society

may require an initial rise in resource use and emissions before the long-term ecological benefits can be achieved. For example, the shift away from a car-dependent society requires an initial expansion of public and active transportation infrastructure, which may cause a temporary increase in emissions and resource use before car use declines. Similarly, a GND may cause an initial increase in consumption before people shift away from work-centric, car-dependent and time-constrained lifestyles. Analyses that consider the ecological impact of policies over time might help establish whether a monetary sovereign economy has the ecological space to implement a GND.

If a certain GND is deemed likely to reduce ecological throughput in the long-run, the monetary sovereign nation may have the ecological space to implement it. However, it is also possible that the GND is estimated to increase ecological throughput in the long-run (e.g., if it is centred around growth or if the policies included are insufficient), in which case an analysis could be undertaken to find out if these ecological impacts can be sufficiently mitigated by altering the policies and goals within the GND framework. For example, if caps on resource use, wealth and/or income and/or work time reduction policies were introduced as part of a GND, or if a possible growth objective was removed, would this reduce the ecological impacts of the GND as a whole? If it is still not expected to have desirable ecological impacts, that specific GND version may not be taken forward. However, if it is expected to "pass" this evaluation, it would be taken to the next step.

The next step would then be to consider the impact of this policy on inflation. Does the economy have enough available resources to implement this program, e.g., material, machinery, labour, technology, etc.? If the economy is deemed to have enough resources at its disposal for the specific GND without causing excessive inflation, this would indicate that the monetary

sovereign nation has both the ecological and national resource space to implement a GND. However, if enough resources are not deemed available, this would require measures to free up resources from elsewhere in the economy. As MMT theorists have shown, the government has many tools at its disposal to mitigate expected inflation, such as various forms of taxation and regulation. By coupling policies expected to be inflationary (a UBI, UBS, etc.) with deflationary ones (taxes and regulations), the government can effectively withdraw purchasing power from some areas of society to free up resources where they are needed.

Indeed, if the GND was expected to be inflationary and/or cause increased ecological harm, the government could, for example, use various forms of targeted taxation/caps to free up the resources necessary to accommodate the GND. Given that there is a positive correlation between income/wealth and environmental impact (Shigetomi et al., 2016; Wiedmann et al., 2020), withdrawing considerable purchasing power from the rich might be an effective way of "resourcing" a GND. Indeed, the rich's consumption goes way beyond their global per capita "fair share" of resources, which degrowthers (and others) have argued prevent others from meeting their essential needs (Dorninger et al., 2021; Hickel, 2020c). The top 1% richest globally causes 17% of all carbon emissions and the top 10% globally causes 48% of all carbon emissions (Chancel, 2021). A recent study found that affluence is a major obstacle to environmental sustainability, arguing that "far-reaching lifestyle changes" (Wiedmann et al., 2020, p. 1) of the rich are necessary to secure sustainable futures. Thus, if richer people are using an excessive share of the global resources, considerable resource space could be freed up by *heavily* taxing/capping the rich in line with ecological fair shares (Hickel, 2020c; Hickel et al., 2022).

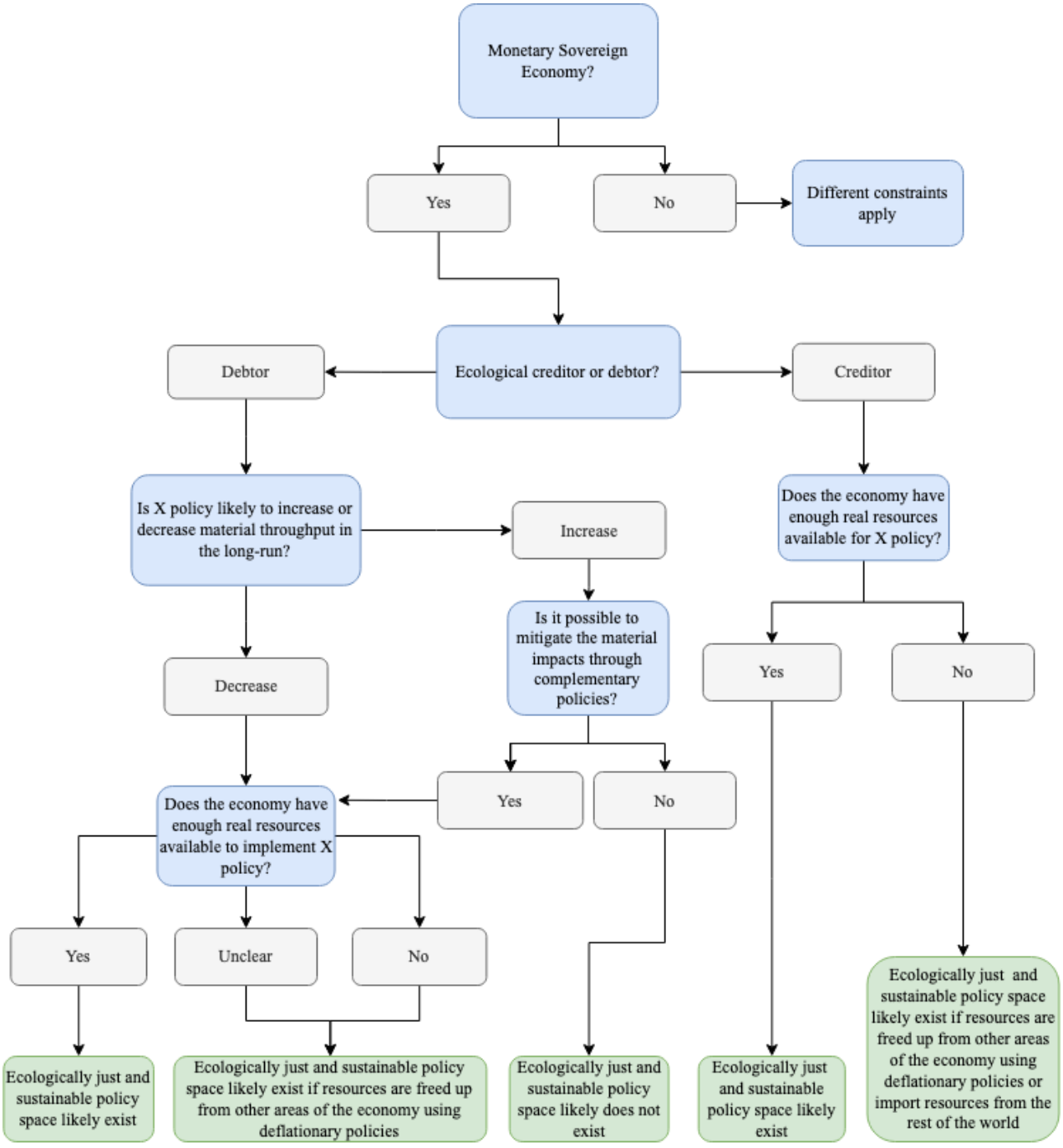
However, MMT economists (and economists more generally) typically argue that taxing the rich is not the most effective way to free up resources as the rich has a relatively lower

propensity to consume (and a higher propensity to save) in comparison to their poorer counterparts (Kelton, 2020; Papadimitriou et al., 2019). Therefore, taxing those who would otherwise spend their income (low- and middle-income groups) is more effective (Kelton, 2020; Nersisyan & Wray, 2021). While taxing middle-and low-income groups might be more effective in immediately freeing up resources in society for each dollar taxed (as these groups consume a relatively higher portion of their income), this does not contradict the reality that the most ecologically intensive group is the richest. Rather, it merely points to the need for sufficiently stringent wealth and income taxes/caps to make a real dent in the consumption of the rich. Richer people may not be spending as large of a *share* of their total income as less wealthy people, but in absolute terms, they are consuming much more, which means higher ecological impacts (Wiedmann et al., 2020). Therefore, as long as the wealth and income taxes/caps are *stringent enough* to impact the consumption and production patterns of the rich and powerful (political challenges aside), this way of freeing up resources in the economy would likely be much more socio-ecologically just than cutting the income of those already living fairly modest lifestyles.

Thus, if the focus of the GND program is on the ecological impacts and resources needed, not the finances, it is likelier that both inflationary limits and ecological limits are respected when designing and implementing it. If this ecologically just and sustainable resource-centred approach was taken, a thorough analysis of the likely resource implications of a GND could be undertaken, which could then inform the decisions around the extent to which complementary deflationary policies are needed, and if so, what areas of society are appropriate targets of such policies. This conceptual thought-process is illustrated below in Figure 2.

Figure 2

An Ecologically Just and Sustainable Policy Space



Note: A decision flowchart illustrating an ecologically just decision-making process using degrowth and MMT ideas of policy space. This is a considerable simplification of all the possible parameters and considerations involved in decision-making and it is not intended as a cohesive roadmap for policymaking. Rather, it is put forward to illustrate some of the broad ideas and directions we might want to consider in deliberations of the policy space available for a given policy in monetary sovereign nations.

These are, of course, deeply political questions that necessitate public discussions around how society can best make use of its resources, including what constitutes sufficiency and excess. Nevertheless, by integrating degrowth and MMT insights in such policy discussions, it becomes clear that a given GND program must be attuned to both ecological limits from a global perspective and resource limits from a national perspective. By integrating attention to the resource requirements and limits across these spatial scales, we might be in a better position to design and implement policies for an increasingly climatically and ecologically disrupted world.

5.3 Limitations

This thought-experiment was outlined to illustrate how we could integrate degrowth and MMT ideas to achieve a more ecologically just and sustainable understanding of policy space for monetary sovereign nations in the Global North, using the GND as an example. Though, there are several limitations associated with this that ought to be mentioned.

One limitation of this approach is that there is likely to be considerable uncertainty involved in predicting the resources necessary for a particular GND given the number of variables involved and the many different types of GNDs proposed. If, for example, a GND included a UBI/care income policy, a GND *could* lead to people reducing their hours in paid work and increasing their time in more socio-ecologically gentle and care(ful) ways of living. Yet, it could equally lead to people living more ecologically intensive lives, working the same paid hours while consuming more. Such a change could increase both inflationary and ecological pressures, which would increase the need for deflationary policies. It could also lead to labour withdrawal that goes beyond what is considered a “desirable” work time reduction, e.g. if sectors that are necessary for upholding vital societal functions are impacted to the extent that key goods and services cannot be sufficiently produced. However, such a process, albeit risky, may lead to

a situation whereby the workers that uphold society become empowered and demand working conditions that better reflect their importance and value, which could be seen as a highly desirable development.

Similarly, if a GND included a job guarantee, its impact on socio-ecological justice and sustainability would largely depend on what jobs are advanced, how they are created and what the working conditions and benefits are. Indeed, the job guarantee would likely not serve social justice ends if it was made into a make-work project, if the jobs were designed and enforced from the top down by the federal government, if job guarantee workers were not able to influence the work undertaken, if the salaries were too low to live off, etc. To counter these tendencies, it would be paramount to ensure that the job guarantee would be designed and implemented in a bottom-up fashion by local organizations, citizens, and municipal governments, that workers and citizens have decision-making power in the areas of work to be undertaken (e.g., one can imagine community referendums as a way to democratically decide what the community needs), paid a living wage (Tcherneva, 2018), included green and "low-productivity" work as an objective, involved a reduction of the working week, etc. (Unti, 2018). Here, there are many opportunities to build upon Unti's (2018) work on the degrowth job guarantee, integrating key degrowth principles around ecological sustainability and justice in the design of the job guarantee.

While the question typically tends to be whether the job guarantee or the UBI/care income is the superior policy choice, the two could also complement each other in a GND. Whereas the main purpose of the job guarantee is to ensure that everyone who wants wage work can find meaningful and socio-ecologically useful employment, one of the key purposes of the care income is to support those in the unpaid sector, strengthening the commons and alternative

forms of work and provisioning (Kallis et al., 2020). Nevertheless, if these two policies were advanced together, additional focus would need to be put on the likely ecological and inflationary impacts of these measures. Both of these policies *could* be inflationary and cause increased resource use as they both involve additional spending by the government, though, it is not a given. The impacts of these policies would largely depend on people's responses to them—dynamics that are hard to predict and would likely differ depending on the specific socio-cultural context within which they are implemented.

Undoubtedly, many different outcomes are possible and there is no way of knowing exactly how the implementation of a GND would play out. Indeed, much of it depends on the policies included in the GND. However, from the perspective of an ecologically just and sustainable policy space, it is likely that a GND that targets several aspects of society simultaneously would fare better, e.g., by setting minimums to ensure that material needs are met (UBI/care income and/or a job guarantee) and maximums to prevent excessive resource use and inequality (wealth/income/resource caps). If careful considerations of the different possible outcomes of a GND program were made, similar to the work of Nersisyan and Wray (2021) in their effort to calculate the "real" costs of a GND (with the critical difference being that ecological limits from a global justice perspective would also be integrated in the analysis), this is likely to be a more accurate approach than simply considering whether a GND could be afforded in financial terms.

5.4 Broader Challenges

From a broader perspective, there are also major political, social, economic and institutional barriers to following the simplified and, somewhat, technical policy approach proposed here. Given that deflationary policies like wealth and income taxes would have to be

quite stringent for these to have an impact on the consumption and production decisions of the richest, one can imagine a range of political and social obstacles to their implementation. Norms around wealth and luxury would likely need to change to accommodate political decisions targeting such wealth, which may be difficult and take time to nurture in society. As D'Alisa & Kallis (2020) phrases it: "Policy change is not only a matter of sound ideas, but also working out the conditions under which these ideas can be implemented" (p.7). The state is a key player in the implementation of all these policies, but the state cannot implement such policies without them being grounded in popular support. For example, if the job guarantee was associated with stigma, if the UBI/care income was viewed as an undeserved "hand out," and if income and wealth caps were seen as unjust state interferences in the lives of hardworking people, then such policies would receive considerable pushback from the public. This speaks to the importance of building support for policies like these on the ground, changing societal norms to make them "common sense" (D'Alisa & Kallis, 2020).

But how can such common senses be built and grounded in popular opinion? How is a sufficiently progressive GND likely to suddenly achieve the popular support necessary to make it implementable? How can a shorter working week gather enough supporters in societies with a strong (over)work culture? How can degrowth principles like sufficiency and limits take hold when society keeps propagandizing the ideology of growth and limitless consumption and production? How can the domination of neoclassical economics within governments and the public be shaken up enough to let MMT perspectives come to the fore *without* causing more ecological degradation and resource drain from the South? And perhaps even more worryingly, how are these major alterations in common senses supposed to be achieved within the closing window of time to prevent disastrous climate, ecological and social impacts?

Both the degrowth and MMT schools are certainly trying to make their respective visions more common sense in society. By encouraging the creation of "nowtopias"[15] and shedding light on existing versions of them, degrowthers have sought to show that collective grassroots struggles for an alternative society are already being built in the cracks of the current capitalist system (Demaria et al., 2019). Degrowthers try to demonstrate that while a degrowth society would require changes to certain aspects and norms of current Global North societies, such as car-dependency, air travel patterns, over-consumption, etc., these changes would be largely desirable as many of society's shortcomings would be simultaneously dealt with, including improving access to the material necessities of life, reducing stress and improving work-life balance, reducing income inequality and fostering more meaningful lives (Hickel, 2020b; Kallis et al., 2020). While these gains may not appeal to everyone, focusing more on the benefits of a degrowth society is likely to be an important factor in building broader public support for degrowth ideas.

MMT, on the other hand, has taken a different route, appealing to people's rationality when deconstructing the neoclassical economics story of how money and government spending function. In doing so, they have tried to tell a more compelling story of governmental spending, using words and analogies that resonates with everyday people (Kelton, 2020; W. Mitchell, 2020; Nersisyan & Wray, 2021). For example, when describing the nuances and intricacies of the MMT theory, Kelton (2020) makes numerous references to car-culture—a cultural connection that probably resonates with many Americans (the intended audience). When speaking about the economy's real resource limits, Kelton (2020) makes the parallel to a car's

[15] Nowtopias have become a keyword in the degrowth literature and refer to spaces where alternatives to the current capitalist system are performed, centred upon convivial and cooperative regeneration, involving non-wage labour (Carlsson & Manning, 2010).

speed limit (p.70). When trying to illustrate the problems of operating the economy under its productive capacity, she explains that this is equivalent to "building a high-performance automobile and then driving it like it's a golf cart" (Kelton, 2020, p. 60). Discretionary fiscal policy is labelled the "steering wheel" (p.63) and the federal job guarantee is the economy's "shock absorber" (p.64), and so on.

Moreover, Kelton (2020) also re-uses words that are already well understood by everyday people, but she uses them in a way that advances her argument. By first noting that the size of America's deficit is not a problem, she notes that there are nonetheless many other deficits in America that *do* matter, including the health care deficit, the good jobs deficit, the education deficit, the infrastructure deficit, etc. (Kelton, 2020). Degrowth may have something to learn here from MMT's strategy of building a compelling story that resonates with the broader public. However, neither MMTers' nor degrowthers' strategies have yet led to widespread uptake of their ideas. While this does not mean that these ideas and perspectives cannot become more accepted in the future, it is unlikely to happen without significant struggle and organizing.

Other factors that may be able to influence the uptake of degrowth and MMT ideas are external events, such as the covid pandemic. While not sufficient in and of itself, the COVID-19 pandemic has led to a resurgence in attention and support of basic income schemes as a range of governments have rolled out emergency packages, seemingly without concerns about how to "pay for" them (Nettle et al., 2021). In a fairly short amount of time, common senses around the value of care work and "essential jobs" have also started to change. The pandemic has shed light on the indispensable role played by the lowest-paid workers, and those unpaid caregivers who are not paid at all, for the very functioning of society (Bolis, 2020; Thomason & Macias-Alonso, 2020). The chronic underfunding of the healthcare sector has come under increased scrutiny,

with healthcare workers having to risk their safety and mental health to make up for the systemic deficiencies of the sector (Hendry & Shingler, 2022; Rail, 2022; Statistics Canada, 2021).

Undoubtedly, many existing problems in society around the valuation of care work, work-life balance, stress, gender and racial inequality, mental health, etc. have been exacerbated and exposed by the pandemic (Igielnik, 2021; Lonska et al., 2021; Weissbourd et al., 2020), which may indicate that people are ready for more radical changes. Indeed, there may not be a better time than now to demand a radical GND, which could serve to break up some deep-seated growth imperatives and help foster a more socio-ecologically just and sustainable future.

Nevertheless, the enormity of the challenge should not be overlooked. While it may be possible to take advantage of shifting public opinions in the wake of the corona pandemic, we still live and operate within a capitalist economy, organized around capital accumulation and growth. Even though there has been increased attention around whether governments really do have a "magic money tree" and the important role of unpaid work and the care sector more broadly, it is still a momentous challenge to channel this attention into real change.

Additionally, while the use of MMT insights may be striking in a low-inflationary world, it deserves mentioning that today's, somewhat price-unstable world, may impose additional challenges. The decades preceding 2020 were marked by low or even insufficient inflation in many monetary sovereign countries, but the covid-pandemic, the war in Ukraine and the increasingly devastating impacts of climate change across the world are impacting a range of important sectors, e.g., agriculture production. These crises exacerbate each other and are likely to cause a reduction in agricultural yields, leading to food shortages, food insecurity, and soaring prices (Foreign Agriculture Service, 2022). Given that climate change is only to become worse with time (unless radical changes are undertaken), price stability may become increasingly

difficult to predict and ensure. While this does not make the MMT lens less useful per se, the days of low and stable inflation might be behind us—at least for some time. MMT ideas become popularized in a time of consistently low inflation, but questions remain about how useful their ideas are in times of high and unpredictable inflation. While MMTers are highly critical of the mainstream economics approach of hiking interest rates as the sole solution to various types of inflation—arguing that it is key to first identify the cause of inflation before proposing a solution (Kelton, 2020)—identifying the specific sources of inflation may become increasingly hard if these become entangled with each other as climate change worsens. Indeed, if the causes of inflation are global in nature and are interlinked with other crises, they will become increasingly hard to identify, and therefore gradually more challenging to anticipate, manage and prevent—especially on a national level. These broader questions and challenges around inflation are beyond the scope of this paper, but they deserve additional attention in the MMT literature.

This discussion surely illustrates the complexities involved in advancing a policy approach based on degrowth and MMT insights. Yet, this does not make it a futile exercise to deliberate how degrowth and MMT ideas *could* be used together in the direction of ecological justice and sustainability if given the opportunity. As noted earlier in the paper, there are also many opportunities associated with bringing their respective insights together in a concerted policy agenda, which speaks to the use in furthering degrowth-MMT nexus analyses in the literature.

6.0 Conclusion

In this thesis, I have initiated a conversation between the degrowth and MMT schools. After having compared the two school's underlying assumptions and positions on economic growth, economic limits, work and value, and funding strategies, it has become evident that while these schools come from different intellectual traditions, are based upon different ontological presuppositions about the world, and differ in many of their goals and assumptions, they also share many objectives and values, which is especially clear at the boundary of each school, where there is an emerging body of work that uses both degrowth/growth critical and MMT ideas. I concluded the results chapter by outlining four areas that are particularly ripe for further cross-fertilizations: MMT could benefit from a deeper engagement with growth-criticisms, a more thorough consideration for socio-ecological justice in their analyses of the limits to monetary sovereign economies, and a re-thinking of the benefits of a modest UBI/care income in recognition of the unpaid care work that is needed to maintain society. Degrowth, on the other hand, could benefit from shifting their policy discussions from how to "pay for" their policies to how to resource them and by situating this new framing within inflationary limits in addition to ecological limits.

In the discussion chapter, I then focused on further fleshing out how degrowth and MMT could, together, inform policymaking in a more concrete sense. I brought together degrowth and MMT ideas on limits and put forth a conceptual framework of an ecologically just and sustainable conception of policy space centred on monetary sovereign nations in the Global North who are ecological debtors. To illustrate this conceptual framework, I used a GND policy program as an example. I contemplated how the implementation of a GND could be achieved using this ecologically just and sustainable conception of policy space. In addition to presenting

some options for how monetary sovereign governments *could* think about policy space that is in line with both inflationary and ecological limits, it was also noted that there are considerable political-economic, institutional and social limitations to the use of these insights in practice given current norms, established interests, power structures, as well as given the much more complex and messy nature of politics and policy-making. Yet, given the many opportunities for connecting degrowth and MMT insights, further and deeper degrowth-MMT collaborations seems like a worthy research agenda—not only because of the conclusions drawn here but perhaps even more for their potential in sparking new debates, insights and questions. Indeed, given the momentous socio-ecological challenges of our time, interdisciplinary alliances across schools that share a commitment to a more socio-ecologically just and sustainable world are undoubtedly worthwhile undertakings.

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