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Doctoral Thesis

Degrowth and Capital: Assembling a Power-Centred Theory of Change

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**Faculté
des
Sciences**

Degrowth and Capital:
Assembling a Power-Centred Theory of Change

Thesis presented by Julien VASTENAEKELS

with a view to obtaining the PhD Degree in Sciences (“Docteur en Sciences”)

Academic year 2022-2023

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To Lia and Maé

Abstract

In the context of contemporary socio-environmental shifts, the concept of “degrowth” advocates for transforming societies to ensure environmental justice and a well-being for all within planetary boundaries. This PhD thesis, positioned within degrowth studies, provides a processual, holistic and interdisciplinary exploration of the dynamics between degrowth transformations and capital accumulation, understood as an all-encompassing power process.

I start by critically exploring the role of capital accumulation in the unfolding of degrowth transformations, highlighting some shortcomings of conventional views that predominantly see capital accumulation as a primarily production-oriented process. While, historically, the degrowth project has opposed economism, these perspectives tend to overlook the deep intertwinement between economics and politics in the intersection between degrowth transformations and capital accumulation. This thesis then considers the theory of “Capital as Power” (CasP), which dissolves the boundaries between economics and politics in the study of capital. Key implications of CasP for the unfolding of degrowth transformations are highlighted. Through this lens, I identify four distinct elements of dynamics, each represented as a causal loop diagram (CLD), capturing the complex relationship between degrowth transformations and the power processes of capital accumulation. Using insights from Social Practice Theory (SPT), I further investigate how degrowth-aligned practices, reforms, and ruptures may be inhibited by “strategic sabotage” processes that bolster capital accumulation, conceptualising four modes of sabotage, set into motion through two additional elements of dynamics. These six elements of dynamics are then assembled into a single CLD, which is used to explore four scenarios for the unfolding or marginalisation of degrowth transformations against the process of capital accumulation.

In short, as the journey progresses, this thesis assembles a power-centred theory of change for degrowth against the process of capital accumulation. It emphasises the importance of understanding and navigating these power dynamics for those willing to move towards a degrowth society.

Résumé

Dans le contexte des mutations socio-environnementales contemporaines, le concept de « décroissance » préconise la transformation des sociétés afin de garantir la justice environnementale et le bien-être de tous dans les limites de la planète. Cette thèse, située dans les *degrowth studies*, réalise une exploration processuelle, holistique et interdisciplinaire des dynamiques entre les transformations de décroissance et l'accumulation du capital, comprise comme un processus de pouvoir englobant.

Je commence par explorer de manière critique le rôle de l'accumulation du capital dans le développement des transformations de décroissance, mettant en évidence certaines lacunes des visions conventionnelles qui voient principalement l'accumulation du capital comme un processus essentiellement orienté vers la production. Alors que, historiquement, la décroissance s'est opposée à l'économisme, ces perspectives ont tendance à négliger l'entrelacement profond entre économie et politique dans les transformations de décroissance. Cette thèse considère ensuite la théorie « Capital as Power » (CasP), qui dissout les frontières entre économie et politique dans l'étude du capital. Les principales implications de CasP pour le déploiement des transformations de décroissance sont identifiées. À travers le dialogue entre CasP et la décroissance, j'identifie quatre éléments distincts de dynamiques, chacun représenté sous forme de diagramme de boucle causale (CLD), capturant la relation complexe entre les transformations de décroissance et les processus de pouvoir de l'accumulation du capital. En utilisant la Théorie de la Pratique Sociale (SPT), j'examine davantage comment les pratiques, réformes et ruptures alignées sur la décroissance peuvent être inhibées par des processus de « sabotage stratégique » qui renforcent l'accumulation du capital, conceptualisant quatre modes de sabotage, mis en mouvement à travers deux éléments supplémentaires de dynamiques. Ces six éléments de dynamiques sont ensuite assemblés en un seul CLD, qui est utilisé pour explorer quatre scénarios de déploiement ou inhibition des transformations de décroissance face au processus d'accumulation du capital.

En somme, cette thèse assemble progressivement une théorie du changement centrée sur le pouvoir pour la décroissance face à l'accumulation du capital. Elle souligne l'importance de comprendre et de naviguer dans ces dynamiques de pouvoir pour celles et ceux qui veulent évoluer vers une société de décroissance.

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1 Introduction

“We live in capitalism. Its power seems inescapable. So did the divine right of kings. Any human power can be resisted and changed by human beings. Resistance and change often begin in art, and very often in our art, the art of words.”

— Ursula K. Le Guin, National Book Awards speech (2014)

1.1 Introduction

As we stand at a precipice, with seven of the eight global-scale safe and just Earth system boundaries quantified by Rockström et al. (2023) already exceeded¹, the world faces a daunting reality. The evidence is clear, and solutions are available; however, the paths to just and sustainable societies remain shrouded in uncertainty. Despite the unrelenting activism of millions, the emergence of important environmental movements, and the proliferation of alternative practices and policy proposals that nurture visions for sustainable futures, the transformative processes that we need remain elusive.

As the degrowth concept gains traction, advocating for a radical societal shift towards global environmental justice and well-being beyond growth, the pivotal question of “how” this shift can be enacted increasingly comes to the fore. The premise of this thesis is simple: to comprehend the dynamics of our world and how to instigate profound socio-ecological change, we must delve into the heart of capitalism – capital and its accumulation. This PhD thesis aims to unravel the power dynamics underpinning capital and their role in shaping the potential for transformations in line with degrowth principles. By developing and connecting elements of dynamics for a new theory of change for degrowth, the research ultimately envisions contrasting pathways of

¹ These are global boundaries related to climate, functional integrity of ecosystems, natural ecosystem area, surface water, nitrogen, and phosphorus.

transformation, broadening our understanding of the possibilities of change in the face of capitalist power.

In the remainder of this introductory chapter, I lay the groundwork for this thesis by providing key background elements on degrowth, its historical development, the related research programme and degrowth's relationship with capitalism. I discuss the need for a more comprehensive theory of change and highlight the significance of capital as a focal point of analysis. The aims of this thesis, including the research question, are outlined. Subsequently, I delve into the research stance, touching upon the onto-epistemology and ethics underpinning the study, the theorising trigger, and the theoretical perspectives adopted. Furthermore, I elaborate on the research strategy and methods employed in this investigation, reflect on the research journey, and establish the lines of demarcation. Finally, an overview of the structure and organisation of the thesis is presented, outlining the contents of each chapter to provide a clear roadmap for the reader.

1.2 Background

1.2.1 Degrowth: A brief history and definition

Criticism of the environmental consequences of capitalism and industrial society has a long history, with contributions from influential thinkers such as Karl Marx (1867), who discussed the metabolic rift between society and nature (Foster, 2000). However, the real inception of the environmental crisis can be traced back to the 1940s, when the pursuit of economic growth began to dominate the priorities of Western societies before gradually making its way across the globe (Laurent, 2022). During this period, some of the most damning critiques were published, including Fairfield Osborn's *Our Plundered Planet* (1948), William Vogt's *Road to Survival* (1948), and K. William Kapp's (1950) *Social Costs of Private Enterprise* and Roger Heim's *Destruction et protection de la nature* (1952).

Later, works such as Murray Bookchin's *Our Synthetic Environment* (1962) and Rachel Carson's seminal *Silent Spring* (1962), which shed light on the devastating ecological consequences of pesticide use, further cemented the growing awareness of environmental devastation. In 1967, Ezra J. Mishan's *The Cost of Economic Growth* extended the notion of cost to all human and environmental consequences of economic activity and laid the foundation for subsequent critiques of growth. Nicholas Georgescu-

Roegen's *The Entropy Law and the Economic Process* (1971), while fusing the principles of thermodynamics – specifically the concept of entropy – with economic theory, demonstrated that perpetual economic growth, as it is traditionally understood, is not possible because the Earth's resources are finite and the degradation of energy is irreversible.

While the role of growth in socio-ecological issues might already have been acknowledged to a large extent within environmental movements at that time (Milanese, 2023), the publication in 1972 of the “Limits to Growth” report commissioned by the Club of Rome² helped raise environmental concerns among the broader public and decision-makers. Using a system dynamics model, the Massachusetts Institute of Technology (MIT) research team projected a profound crisis due to resource depletion and environmental degradation if the predominant trends persisted. This marked a pivotal point in the discourse on the impacts of capitalist and industrial society on the environment, underscoring the necessity for alternative modes of societal development (Petit et al., 2022).

Among the many positive and critical discussions that followed this report, there was an interview with André Gorz at *Le Nouvel Observateur*. In this context, the term “décroissance” (later translated into “degrowth”) was first publicly mentioned. Discussing the relationship between capitalism and the environment, Gorz posed the following question: “Is the earth's balance, for which no-growth – or even degrowth – of material production is a necessary condition, compatible with the survival of the [capitalist] system?” (Gorz, 1972, p. iv, my translation [mt]). However, at that time, “décroissance” primarily referred to a quantitative reduction in production, in contrast to the modern, multifaceted concept of degrowth (called “néodécroissance” by Lievens, 2022). The early notion of degrowth gained prominence with the French translation of a collection of texts by economist Nicholas Georgescu-Roegen in 1979, entitled *Demain la décroissance* –

² The Club of Rome is a non-profit think tank that brings together experts and businesspeople from various backgrounds to discuss critical global issues, with the ultimate goal of providing independent expertise to governments and businesses. It was founded in April 1968 by Aurelio Peccei, an Italian industrialist, and Alexander King, the Director General of Scientific Affairs at the Organisation for Economic Cooperation and Development (OECD).

Entropie – Economie – Ecologie (“Tomorrow, Degrowth – Entropy – Economy – Ecology”).^{3,4}

Although the term “décroissance” temporarily faded from prominence, this initial phase significantly contributed to the seeding of the degrowth concept and laid the groundwork for the future creation of the degrowth movement (Parrique, 2019; see Table 1, below, for a definition). Concurrently, a series of critical social thinkers aligned with post-development critiques in important ways established its intellectual foundations. They included Bernard Charbonneau with his critique of “exponential development”, Cornelius Castoriadis and his vision of “radical autonomy”, Ivan Illich and his philosophical ideas on “conviviality”, Françoise d’Eaubonne, at the origin of ecofeminist thought, François Partant as a staunch critic of economism, and André Gorz with his cultural critique of capitalism (Latouche, 2019; Martínez-Alier et al., 2010; Schmelzer & Eversberg, 2017).

The concept of degrowth re-emerged in February 2002, with a special issue in *Silence* drawing on Georgescu-Roegen’s work. This was quickly followed by the publication of several articles in French newspapers, including one by Hervé Kempf in *Le Monde* titled “Sauver le monde par la décroissance soutenable!” (“Saving the world through sustainable degrowth!”). In March 2002, a conference called *Défaire le développement, refaire le monde* (“Defying development, remaking the world”), organised by groups critical of capitalism, propelled the idea of degrowth into the spotlight (Duverger, 2020).

In this context, “degrowth” arose as a provocative slogan, a “missile word” (Ariès, 2005; Demaria et al., 2013; Petridis et al., 2015), to challenge the primacy and legitimacy of growth as an ideology, phenomenon, and institution (D’Alisa et al., 2015; Kallis, 2018; Latouche, 2009a, 2019). Degrowth thinkers see GDP growth as one of, if not, the most important policy objectives in capitalist societies – it is identified as a

³ Although Georgescu-Roegen did not employ the term “degrowth” in his writings, he granted permission for this phrase to be used in the French versions of his work on bioeconomics. The translators, Jacques Grinevald and Ivo Rens, admitted having chosen this title on purpose, as a provocation (Petit et al., 2022). For Missemmer (2013), the association between Georgescu-Roegen and degrowth is based more on misunderstanding than on real proximity.

⁴ Georgescu-Roegen’s student, Herman Daly (1974), who was one of the founders of ecological economics, developed in the 1970s and 1980s the concept of steady-state economy. Such an economy seeks stable consumption of energy and materials and a stable population at sustainable levels. The concept of a steady-state economy share concerns with the modern concept of degrowth but leads to different political objectives (Lianos, 2018).

hegemonic ideology (Schmelzer, 2016a). They criticise the relentless pursuit of economic growth and its disastrous socio-environmental consequences in a world whose natural resources are finite. In addition to contesting the cultural foundations of growth, they stand against the environmentally destructive acceleration of the pace of life – as encapsulated by Harmut Rosa (2013) in his concept of “social acceleration”. In this respect, the idea of degrowth directly challenges the concepts of “green growth” and other variants of ecological modernisation (D’Alessandro et al., 2020; Hickel & Kallis, 2020; Sandberg et al., 2019), which propose that economic growth can be harmoniously combined with balanced environmental impacts at global and local scales (e.g. Jouvét & de Perthuis, 2013; Stiglitz, 2019). Degrowth thinking proposes a transformation and deceleration of socioeconomic life (Parrique, 2022) to facilitate more sustainable and purposeful ways of living. This radical socio-ecological perspective advocates an end to the logic of “more is better”, thereby joining a wider debate on alternative ways of conceiving prosperity (Cassiers, 2011; Jackson, 2009).

As a “concept in the making” (Petridis et al., 2015, p. 176), degrowth has given rise to “a multi-faceted political project that aspires to mobilise support for a change of direction, at the macro level of economic and political institutions and at the micro level of personal values and aspirations” (Kallis, 2011, p. 878). The concept has been criticised regarding, notably, the performativity of its underlying metaphor (e.g. Dean, 2014; Drews & Antal, 2016)⁵ and its ideology (e.g. Di Méo, 2006; Harribey, 2009; McAfee, 2020).⁶ Nonetheless, the idea of degrowth has attracted a growing number of scholars, practitioners, and activists, mainly in Europe and other Western countries.⁷

The most cited definition views degrowth “as an equitable downscaling of production and consumption that increases human well-being and enhances ecological

⁵ Due to negative cognitive and linguistic connotations, Drews and Antal (2016) argue that the use of the term “degrowth” could be detrimental to convincing a wide audience. They offer three rebuttal arguments: First, the term “degrowth” implies a downward movement, which may provoke negative reactions because of deeply ingrained associations between “positive” and “good”, “negative” and “bad”. The second argument is that the term could be misunderstood by those unfamiliar with the concept as a simple contraction of the economy. Finally, the term “degrowth” may inadvertently reinforce the existing growth-centric mindset. Kallis (2018) acknowledges the relevance of this last argument, which was also advanced by Dean (2014), while the rejection of economism is key to degrowth thinking (see Section 2.4.2). See Section 6.3.1.1.

⁶ See Parrique (2019) for a comprehensive discussion of the controversies surrounding degrowth.

⁷ It should be noted, however, that synergies with environmental justice movements in the Global South are being explored (Rodríguez-Labajos et al., 2019).

conditions at the local and global level, in the short and long term” (Schneider et al., 2010, p. 512; see also the definition in Table 1, below). However, this definition may not capture all the nuances and complexities of the concept. Degrowth advocates have relied on a multidimensional critique of growth – including ecological, socioeconomic, cultural, anti-capitalist, feminist, anti-industrialist, and internationalist perspectives (Schmelzer et al., 2022). In this way, while “degrowth” is mostly used as a singular term, the plural form “degrowths” could be considered to emphasise the multiplicity of lines of thought that intertwine and give rise to nuanced visions. Expanding on the work of Flipo (2007) and Bayon et al. (2012), Demaria et al. (2013) provide a list of six sources that inform the degrowth debate: (1) degrowth challenges the idea of a possible and sufficient decoupling of ecological harms from economic growth, advocating for shared care of environmental resources and promoting the **integration of humans into nature**; (2) it **challenges the dominant narrative of development and utilitarianism**, criticising the homogenisation of cultures due to widespread adoption of Western consumption and production models, and promoting a redefined human identity independent of economic representations (3) it embodies a **critique of materialistic lifestyles**, advocating for more meaningful living and well-being, as shown by the voluntary simplicity movement, which views a less consumer-driven life as liberating and profound; (4) inspired by bioeconomics and ecological economics, degrowth challenges the belief in limitless economic growth, emphasising the **finite availability of resources and energy**, questioning the efficacy of technological innovation to bypass these physical limits, and arguing for the reduction of material and energy use to slow down environmental degradation;⁸ (5) degrowth embraces the need for enhanced **democracy**, with debates over economic development and technology, and embodies both reformist and radical perspectives, with some advocating for the preservation and improvement of current democratic structures and others demanding entirely new institutions based on direct and participatory democracy; (6) finally, degrowth advocates for the reduction of inequality, aiming to make sustainability and **justice** compatible by favoring large-scale redistribution, sharing and

⁸ Degrowth advocates mobilise a range of evidence regarding observed decoupling rates between economic activity, resource use and environmental impacts (e.g. Haberl et al., 2020; Parrique et al., 2019) to argue that green growth is insufficient to tackle the magnitude of the environmental challenges we face. Furthermore, degrowth scholars and activists criticise the green growth paradigm for its reliance on technological fixes that fail to address the root causes of sustainability issues (Jackson, 2009; Latouche, 2009a; Parrique, 2022).

reduction of excessive wealth, while also advocating for reparation of past injustices, resource redistribution and ensuring wellbeing and a good life for all.

As a generic term, “degrowth” is often employed to refer to different processes and entities, including a movement, academic field, project, vision of society, process of change, set of policies, and mosaic of practices. For clarity, the key terms associated with degrowth used in this research are defined in Table 1.

Table 1. Glossary of key terms associated with “degrowth” used in this research

Note: Except when specified, these definitions are my own.

Term	Definition
Degrowth alternatives	Grassroots movements that challenge the hegemonic growth-oriented paradigm by establishing practices that contribute to a mode of living in line with degrowth principles . They do not necessarily use “degrowth” as a banner or are aware of this concept.
Degrowth movement community	or The set of individuals and groups who are committed to the idea of degrowth and who collectively shape it. It includes researchers, practitioners, and activists who work together to reflect on the concept of degrowth and associated ideas and promote degrowth transformations . The degrowth movement/community explicitly uses the concept of degrowth as a banner – while some may argue that it includes, by extension, those who refer to other growth-critical labels such as “post-growth”. The term degrowth movement or community can also be used in the plural to refer to subgroups (see also degrowth alternatives).
Degrowth pathways	Theoretical “roadmaps”, sequences of events, or the strategies proposed to realise degrowth transformations .
Degrowth policies	Specific policy measures that are proposed by the degrowth community to implement degrowth principles in society. The unfolding of a degrowth policy, from its preliminary reflections to its advocacy, implementation, and effects, can be considered a degrowth transformation .
Degrowth practices	Specific actions that individuals and communities engage in, in line with degrowth principles . They do not necessarily use

	“degrowth” as a banner, nor are they aware of this concept.
Degrowth principles	Degrowth principles refer to the core values and beliefs that form the foundation of the degrowth movement . These principles are not fixed and may continue to evolve. Drawing on principles put forward by other degrowth scholars, Schmelzer et al. (2022): enabling global ecological justice with a reduction in rich countries’ material metabolism; strengthening social justice and self-determination, striving for a good life for all; and redesigning institutions beyond growth dependency.
Degrowth project	The evolving vision of <i>what</i> is degrowth , of <i>why</i> a degrowth transition is necessary, and <i>how</i> to realise it.
Degrowth scholarship, studies or thinking	Scientific study of degrowth , including examination and construction of its theoretical foundations, empirical evidence, and practical applications.
Degrowth or post-growth society	A society that has been significantly transformed in accordance with degrowth principles . While this transformation is necessarily provisional, in such a society, the focus on growth has faded.
Degrowth transformations	Specific processes of socio-ecological change in line with degrowth principles , but do not need to refer explicitly to the concept of degrowth . They notably include the becoming of degrowth practices and alternatives , the advocacy and implementation of degrowth policies , and processes of resistance to growth-oriented dynamics. Degrowth transformations are <i>unfolding processes of change</i> that continually evolve as they become and are resisted. They do not necessarily specify <i>the end states</i> to be reached. See Chapter 4 for a more precise conceptualisation.
Degrowth transition	The set of interacting processes of degrowth transformation that contribute to the emergence of a society aligned with degrowth principles. Although there is no single vision of what the degrowth transition should be, this encompassing process of change is usually defined in the singular.

Degrowth

Overall, degrowth designates an umbrella concept that mobilises various actors in various ways in a process of “democratic transition to a society that – in order to enable global ecological justice – has a much smaller throughput of energy and resources, and thus also a smaller economy; ensures justice, self-determination, and a good life for all under this changed metabolism; and does not depend on growth and continuous expansion” (Schmelzer et al., 2022, p. 39). It directly challenges the hegemonic ideology of continuous economic growth and expansion (Schmelzer, 2016a).

In this way, the degrowth transition is a *path* (Parrique, 2022), emphasising the *processes of transformation* rather than a fixed destination – which Parrique designates as “post-growth”. The multifacetedness of these processes recalls that they represent much more than a simple reduction in the gross domestic product (GDP). As Kallis (2011) indicates, “degrowth is not equivalent to negative GDP growth in a growth economy. This has its own name: recession, or if prolonged, depression” (p. 874). Instead, degrowth is about redefining and reshaping our relationships. As Latouche (2009a) illustrates: “Just as there is nothing worse than a work-based society in which there is no work, there is nothing worse than a growth-based society in which growth does not materialise” (p. 8).

Furthermore, degrowth is defended by its tenants as “a social choice, not imposed as an external imperative for environmental or other reasons” (Schneider et al., 2010, p. 513). In his definition of degrowth, Parrique (2022) emphasises this aspect by including “democratic planning”, in contrast to an “unforeseen, uncontrolled, and suffered crisis” (p. 201, mt). A post-growth society typically envisions a shorter workweek and the expansion of “fulfilling” activities such as teaching, nursing, crafting, and cultural creation, compared to those democratically considered detrimental to well-being and nature (Jackson, 2009; Jackson & Victor, 2011). This society encourages the collaboration over competition (Kallis et al., 2012; Novkovic & Webb, 2014). It would be centred on conviviality and solidarity (Jarvis, 2019). In this way, the downscaling required by the degrowth transition should not be uniform – some activities need to expand (Kallis et al., 2015). However, overall, a reduction in GDP would be a logical consequence of the degrowth transition. The implications and social mitigation of this

economic downsizing have been discussed in numerous degrowth and other growth-critical analyses (Hardt & O’Neill, 2017; Jackson, 2019; Kallis, 2011). Because degrowth pursues global environmental justice, it is important to note that it is the wealthy nations, and not developing ones, that are urged by degrowth tenants to downscale their production.⁹ According to Jason Hickel (2020, 2021a, 2021b), degrowth in the Global North could reshape North-South relations and help the South’s populations to shift away from their forced roles as exporters of cheap labour and raw materials.¹⁰

Finally and importantly, the degrowth project aims to transform our worldviews, which are dominated by economic thinking (Latouche, 2005b), as well as the ways in which we act on the world. In this regard, Latouche advocates “decolonising the imaginary” (Latouche, 2014b) to dismantle the “ideology of growth” (Schmelzer, 2016b); key degrowth scholars have embraced the idea of *escaping the economy* (Fournier, 2008; Kallis, 2018; Latouche, 2009a; Parrique, 2019). Parrique (2019) perceives de-economisation as “the essence degrowth” (p. 144), encompassing two dimensions: “(1) de-economisation of mentalities and social relations in relation to acts of provision (escaping the economic symbolically as a worldview), as well as (2) de-economisation of actual practices and infrastructure (transforming the economy in reality)” (p. 145; see also Section 2.4). In this context, degrowth challenges the dominance of economic thinking in decision-making processes, advocating for a stronger emphasis on democracy and seeking to change society holistically (Fournier, 2008).

1.2.2 Degrowth as a research programme

In the academic sphere, rather than a unified theory, according to Schmid (2019), degrowth is more akin to what Lakatos (1970) calls a “research programme”.¹¹ This

⁹ To highlight the stark imbalances in environmental impacts between the Global North and South, Hickel (2020) demonstrates that a group of rich countries, including the United States, Canada, Europe, Israel, Australia, New Zealand, and Japan, account for a staggering 92% of emissions exceeding the planetary boundary of 350 ppm atmospheric CO₂ concentration. Furthermore, there is a substantial net appropriation of resources by affluent countries from other parts of the world, which accounts for 50% of the total consumption of high-income nations (Dorninger et al., 2021).

¹⁰ Hickel contends that decolonisation in the South may result in a form of degrowth in the North because high-income countries currently maintain high consumption through appropriation from the South. Ending this exploitation could reduce growth among Northern economic elites while benefiting Southern communities and ecologies.

¹¹ For Lakatos (1970), a research programme is a set of assumptions and hypotheses that guide scientific research. It includes a “hard core” of assumptions that are not challenged (e.g. a radical reduction in material-energetic throughput is necessary to avoid ecological collapse), and a “protective belt” of assumptions that are more likely to be modified or abandoned if they are contradicted by evidence (e.g. a

programme encompasses studies that critically analyse the growth phenomenon and its underlying ideas, as well as those exploring alternatives to the growth paradigm at multiple levels (e.g. D’Alisa et al., 2015; Hardt & O’Neill, 2017; Jackson, 2009; Kallis et al., 2012; van den Bergh & Kallis, 2012). Since the First International Conference on Degrowth for Ecological Sustainability and Social Equity, held in Paris in 2008, which introduced the term “degrowth” as the English translation of “décroissance”,¹² over 1,100 texts in various languages and publication types have been published on degrowth (Fitzpatrick et al., 2022). At the time of writing, more than 700 peer-reviewed articles were published on degrowth (see Parrique, 2023). Popularising and reducing the confusion surrounding the concept of degrowth, a series of key books have defined the *why*, *what*, and *how* of “degrowth”, with their respective emphases (including Ariès, 2005, 2011; Bayon et al., 2012; Chertkovskaya et al., 2019; D’Alisa et al., 2015; Hickel, 2021a; Kallis, 2018; Latouche, 2007, 2009a, 2019; Liegey, 2021; Liegey & Nelson, 2020; Parrique, 2019, 2022; Schmelzer et al., 2022). In conjunction with peer-reviewed literature, they have laid the foundations of the transdisciplinary and nascent field of *degrowth studies*.¹³ Moreover, a number of spaces have fostered degrowth research and community, such as the Research & Degrowth research association, the biennial International Degrowth Conferences, the Post-Growth (2018) and the Beyond Growth (2023) conferences at the European Parliament, and more recently, the “Degrowth” journal.

It should be noted that some scholars opt not to use the concept of “degrowth” and instead prefer the more general and possibly more consensual term “post-growth” (for example, Alexander, 2013; Cassiers et al., 2018; Jackson, 2019; Roth, 2017). While this idea also criticises the growth paradigm, the underlying metaphor of “post-growth” focusses more on the destination (“post”, after, subsequent to) than on the process of transformation (“de”, away from, undoing). Furthermore, post-growth research does not

degrowth society will emerge from the combination of grassroots initiatives, political actions and oppositional activism).

¹² Note that the translation of “décroissance” into the transnational academic concept of “degrowth” is not neutral; it has contributed to shifting the field. In that context, Latouche (2023) argues that with the academic concept of “degrowth”, “[t]he radical nature of the original project [...] loses much of its potential and militant incentive” (para. 13; mt) because of the field’s inclination to study degrowth with the economic toolbox.

¹³ See Timothée Parrique’s (2019) PhD thesis, *The Political Economy of Degrowth*, for a comprehensive review of the field, especially in its political-economic dimensions.

usually and explicitly claim the heritage of the debates on degrowth from the early 2000s in France, which were grounded in strong critiques of capitalism. The term “post-growth” encompasses a broader variety of critiques and alternatives to growth, including but not limited to degrowth, such as “Prosperity without growth” (Jackson, 2009) and “Doughnut economics” (Raworth, 2017). Other studies refer to Daly’s (1974) earlier concept of a steady-state economy (Blauwhof, 2012; Lawn, 2011; Trainer, 2016; see Section 2.3.2): “an economy with constant stocks of people and artifacts, maintained at some desired, sufficient levels by low rates of maintenance throughput, that is, by the lowest feasible flows of matter and energy from the first stage of production to the last stage of consumption.” (Daly, 1977, p. 17). Despite these different frames of reference, the fields of degrowth, post-growth, and steady-state economics overlap or feed each other. For instance, the preamble session to the Post-Growth Conference at the European Parliament in 2018 was entitled “The Institutionalisation of *Degrowth* and *Post-growth* : the European level”. The frontier is blurred; on many occasions, degrowth and post-growth are used interchangeably.¹⁴

1.2.3 Elements of degrowth’s critique of capitalism

Since the rise of the modern concept of degrowth in the early 21st century, its proponents have consistently offered a critique of capitalism (Petit et al., 2022, p. 104). With a focus on the tenets of growth, this critique can be considered as part of a mosaic of contemporary eco-critiques of capitalism, including eco-Marxists (e.g. Foster, 2000; Foster & Burkett, 2017; Löwy, 2011; Malm, 2018; Moore, 2016; Tanuro, 2015),¹⁵ Hervé Kempf (2007), and Naomi Klein (2015)¹⁶. As Pineault (2020) articulates:

¹⁴ In this manner, three of the most prominent contemporary degrowth researchers, G. Kallis, J. Hickel and J. Steinberger, have joined their force in an ERC-funded project entitled “A Post Growth Deal (REAL)” (2023-2029).

¹⁵ While both degrowth studies and ecological Marxism critique the environmental consequences of capitalism and occasionally engage with each other (see notably Sections 2.3.2 and 2.4.4), they constitute different fields with different underlying philosophies and foundational theoretical debates. Degrowth’s criticism frequently focuses on growth in the Global North, with an emphasis on local transformations and a cautious approach to technology. Ecological Marxism, on the other hand, integrates Marxist analysis with ecological concerns, identifying structural aspects of capitalism, such as private property and commodification, as the root causes of environmental degradation. Important theoretical debates within ecological Marxism, stemming from varying interpretations of Marx’s work, shape its critiques and proposed solutions. However, it should be clear that this research is positioned in the context of degrowth studies (see also Section 1.4.5).

¹⁶ While ecological Marxists develop strong theoretical foundations mostly within academia, Kempf and Klein are journalists and play their role more as opinion-forming essayists.

“Degrowth is part of a contemporary renewal of anti-capitalist critique and post-capitalist politics, practice and thought. A defining feature of the degrowth movement [...] is that it is very self-consciously aware of being part of a wider whole. As a movement of thought and practice, degrowth offers a particular perspective alongside and to be completed by others. In doing so it differs from many more traditional critiques of capitalism which are totalizing in their claims and outlook.” (p. 29)

The potential for capitalism to adapt to zero or negative growth is a subject of contention (e.g. Blauwhof, 2012; Foster, 2002; Klitgaard, 2013; Lawn, 2011; see Chapter 2). However, the ideal of a degrowth society has been presented as being incompatible with capitalism due to its intrinsic association with growth, environmental harms, and numerous societal issues such as social inequalities, gender oppressions, racism, and more, all of which contradict the principles of degrowth¹⁷ (Boonstra & Joosse, 2013; Kallis, 2018; Latouche, 2009a; Parrique, 2019). Latouche (2009a) starkly positions that capitalism, in its “spirit” (Weber, 1904/2013), fundamentally opposes the collective, democratic societal organisation that degrowth envisions and deems essential.¹⁸ More than just being incompatible, Latouche ultimately argues that “degrowth is fundamentally anticapitalist” (p. 91).

Survey results from the 2014 International Degrowth Conference show a spectrum of degrowth perspectives, with participants exhibiting varied, yet predominantly critical, stances on capitalism (Eversberg & Schmelzer, 2018). Schmelzer et al. (2022) note, indeed, that some degrowth proponents may hesitate to openly criticise capitalism, focussing instead on challenging growth as a more tangible and crucial phenomenon. Their reluctance, for Andreucci & McDonough (2015), could stem from their willingness to promote change through voluntary, small-scale actions or to maintain dialogue with mainstream academics and economists, which could be complicated by an overt anti-capitalist stance. However, many argue that transitioning to a non-growth society would

¹⁷ “(1) Sufficiency stands against any concentration of economic wealth, let it be idle “capital” or means of production. (2) Autonomy opposes wage-labour [...]. (3) Degrowth is at war against commodities. It is a struggle to shrink the sphere of market exchange and decommodify whatever is being used to produce along with what is being produced. (4) The degrowth vision of business rejects the profit motive” (Parrique, 2019, p. 390).

¹⁸ Cornelius Castoriadis (1975/1998), a source of inspiration for direct democracy models in degrowth discourse, held that capitalism and democracy are incompatible because capitalism is based on heteronomous justifications – the idea that society is organised by external forces or laws –, and their simultaneous evolution is coincidental (Kallis et al., 2018).

necessitate overhauling core institutions, rendering the system unrecognisable as capitalist (Gorz, 1991/2013; Jackson, 2009; Kallis, 2011; Latouche, 2009a).

From a theoretical standpoint, the degrowth perspective on capitalism has been fluid. Early French degrowth thinkers, including Serge Latouche (2009c)¹⁹ and Paul Ariès (2011)²⁰, critiqued Marxism for not completely breaking with productivism and economism. However, while these thinkers emphasised the cultural drivers of growth over a purely or primarily material phenomenon, they did not propose a robust alternative perspective on capital.

This stance drew criticism from certain Marxian scholars, who accused degrowth theory of inadequately understanding capitalism and, by extension, failing to provide systemic solutions (e.g. Correia, 2012; Foster, 2011; Harribey, 2009, 2022).²¹ Schmelzer et al. (2022, p. 132) pinpoint this – in my view, fair – critique, suggesting that a predominant focus on consumption and GDP alternatives might obscure the intricate dynamics of capital accumulation:

“Degrowth has repeatedly been accused of formulating only a superficial critique of capitalism, of misjudging the actual drivers of growth, or of advancing individualizing appeals for renunciation. And, of course, sometimes these critiques are warranted. For example, a tendency to focus mainly on consumption, alternative indicators beyond GDP, or policy reforms can risk losing sight of the role that capitalist accumulation has in driving the growth process.” (p. 132)

¹⁹ “So my break with Marxism was long and radical. The first culturalist stage was the rejection of productivism as a universal cultural matrix (basically the Westernisation of the world) with the cult of the productive forces and the accumulation of capital, once it was no longer capitalist. A second, more ecological stage involved a critique of the Promethean modernity of Marxism. Whereas the first socialism, that of William Morris, Cabet and even Fourier, challenged industrialism, Marxism adopted the Cartesian paradigm of man as master and dominator of nature, the hubris of unlimited consumerism and the myth of material abundance. We are in denial of the second law of thermodynamics, if you like. Marx's Schumpeterian vision of growth as creative destruction overlooks the destructive forces that ultimately prevail over the productive forces. Rather, capitalism is a process of destructive creation.” (Latouche, 2009c, p. 313; mt)

²⁰ While recognising that there are anti-productivist and anti-economist interpretations of Marx, Ariès (2011) argues: “Yet the Marx that has come to the fore is the Marx of economic reductionism. Éric Hobsbawm still maintains that the analysis of any society must begin with that of its mode of production, that is to say, on the one hand, the technico-economic form of the ‘metabolism between man and nature’ and, on the other, the social arrangements according to which labour is managed.” (p. 94, mt).

²¹ In addition, Marxian critics of degrowth have contended that degrowth thinking moves away from class struggle, disempowering the working class, and favouring interstitial initiatives over systemic change (see Parrique, 2019, pp. 426–430).

As Kallis (2018, pp. 164–165) shows, Marxian critiques argue that degrowth studies sometimes conflate cause and effect, associating growth as the driver rather than a by-product of capital accumulation. Foster (2011) deems the term “growth society” misleading and, instead of degrowth, calls for “de-accumulation”. Engel Di-Mauro (2012) further contends that capitalism’s root lies in the exclusionary process of appropriation and control, not just growth. It is true that in the degrowth literature, the relation between capital accumulation and growth is often unclear; capitalism is often conceived as a subcategory of growthism, and fighting growth is widely believed as fighting capitalism (Parrique, 2019). Kallis and Parrique (2021) justify their focus on growth rather than on capital because it would be the “means” and “ends” of capital accumulation:

“Growth is the child of capitalism, but the child grew up and took over the head of the family. Capitalism’s interest in accumulation is promoted and legitimised through – and in the name of – “growth.” The critique of growth is the most fundamental critique of capitalism – one that criticises not only the means capitalism uses but the very ends it sells.”

Their conclusion is that “[t]his makes degrowth and (eco)socialism [i.e. (eco)Marxism] natural allies, not adversaries” (Kallis & Parrique, 2021). With this in mind, contemporary degrowth scholarship tends to establish synergies with anti-productivist Marxian thought, i.e. ecosocialists (Akbulut, 2021; D’Alisa, 2021; Durand-Folco, 2015; Löwy et al., 2022). There is an emerging reliance on Marxian capital accumulation perspectives, using the renowned “M-C-M” cycle as capitalism’s driving movement, which sees capital accumulation as the direct cause of growth (see Section 2.3). The prominent degrowth book *Degrowth: A Vocabulary for a New Era* (2015), with Andreucci and McDonough’s (2015) entry on “Capitalism”, marks a shift in this regard – it presents capitalism from a single Marxian perspective. Hickel (2021a), Koch (2019), Pineault (2020), and Hofferberth (2021) have been notable contributors to this tendency. In 2023, the Marxian magazine *Monthly Review* published a special issue, with both eco-Marxian and degrowth contributors, to reconcile ecosocialism and degrowth under the label of “planned degrowth” (Foster, 2023).

While this is not the perspective that I will draw on in this thesis (see Sections 1.2.5, 1.4.3, and Chapters 3 and 4), I acknowledge that the elaboration of a comprehensive perspective on capital is crucial for degrowth thinking (as it will be discussed in Section 1.2.5). The need for a thorough understanding of capital is less about

knowing whether or why capitalism is compelled to grow, but rather, as Kallis (2018) argues, about illuminating “whether and how a degrowth transition could start and evolve within the existing capitalist economies in which the majority of people live” (p. 169).

1.2.4 The need for a more comprehensive theory of change for degrowth from within capitalism

As Latouche argues, “if ‘getting out of capitalism’ is a convenient formula, it designates a historical process that is anything but simple...” (p. 284, mt). The idea of degrowth is often described as “revolutionary” (Andriotis, 2014; Garcia-Arias & Schöneberg, 2021; Latouche, 2006; Paulson et al., 2020), but how can revolutionary change be achieved? Degrowth aims to transcend capitalism, yet it is implausible to “erase” this system and create a new society from scratch (Boonstra & Joosse, 2013; Buch-Hansen, 2014; Kallis, 2018). Socio-ecological transformations are intrinsically linked to the existing world: “a realistic discussion of a transition cannot assume a blank slate, but must start with the historically given initial conditions currently prevailing” (Daly, 1991, p. 190). As a result, to make degrowth futures happen, we need to engage with and confront the dominant system (Kallis & March, 2015, p. 362). The critical question is how the degrowth transition can unfold from within the context of modern, globalised capitalism. The well-known quote, attributed to both Slavoj Žižek and Frederic Jameson, “[i]t is easier to imagine the end of the world than the end of capitalism”, underscores the enormity of the challenge. Is there truly no realistic alternative? (Fisher, 2009).

Degrowth proponents often advocate an open approach to the alternative society that should emerge, avoiding an exclusively top-down definition (Kallis, 2011). This path relies on various means and strategies (Barlow et al., 2022). Degrowth transformations include the unfolding of alternative practices (Latouche, 2007; Treu et al., 2020), oppositional activism, the development of political movements (Demaria et al., 2013), and the implementation of ecosocial policy proposals (Cosme et al., 2017; Fitzpatrick et al., 2022; Parrique, 2019). While oppositional activism remains underexplored in degrowth scholarship (Chertkovskaya, 2022), the degrowth community has studied and implemented numerous alternative practices and grassroots movements, such as cooperatives, complementary currencies, and ecovillages, offering practical examples of what a post-growth society might resemble in action (Treu et al., 2020). Moreover, according to Schmelzer et al. (2022), the degrowth movement has developed multifarious proposals that can be categorised into six major themes: democratisation, solidarity

economy and the commons; social security, redistribution and limits on wealth accumulation; convivial and democratic technologies; revaluation and redistribution of work; democratisation of social metabolism; and international solidarity. Examples include policies seeking to change the indicators used to measure prosperity (O’Neill, 2012), implement a maximum income cap (Buch-Hansen & Koch, 2019), shorten the work week (Oberholzer, 2023), develop sustainable food systems (Plank, 2022), and defend social enterprises (Johanisova et al., 2013).

As I will posit in Section 1.3, understanding change simultaneously requires understanding resistance to change. Blueprints, policy toolboxes, and the promotion of citizen initiatives is, without doubt, useful, but far from sufficient to articulate and create deep transformations of society. It is not sufficient to elaborate propositions that make sense and to convince as many people as possible that a degrowth society is both desirable and viable, to make it magically become (D’Alisa & Kallis, 2020).²² As Ashford (2015) contends: “Confronting the growth paradigm [...] requires us to understand who is gaming the present system and who is standing in the way of change, and then a society has to care.” He stresses the enormous influence of concentrated wealth steers political, economic, and international decisions on a grand scale. Thus far, barriers to degrowth transformations have been insufficiently addressed (Herbert et al., 2018).

Similarly, for Kallis (2018), a voluntary strategy in which ever more individuals engage in alternative practices and ultimately organise to take political action is not a realistic answer “given the structural obstacles and objective social and political conditions that are in place” (p. 143). It seems that the grassroots initiatives promoted by degrowth have had little large-scale effect on the structures of our capitalist societies (Buch-Hansen, 2018). As Schneider et al. (2010) note, “most of the small to medium-scale degrowth initiatives take place ‘at the fringe of the market economy’, and in other cases they do not challenge the dominant system through the provision of an alternative model” (p. 515). Why do these initiatives remain marginal? Degrowth research has rarely considered processes that inhibit the pursuit of degrowth transformations (Buch-Hansen, 2014; Koch & Buch-Hansen, 2020). There is a need to investigate and respond to

²² This echoes Wright’s (2010) claim that critics of capitalism should tackle the problems of desirability, viability, and *achievability*, while he contends that the latter is clearly the most challenging.

institutions that enable or hinder the emergence and flourishing of these practices (Asara et al., 2015; Hickel et al., 2022; Johanisova et al., 2013; Joutsenvirta, 2016).

For degrowth thinkers, the depletion of resources and ecological overshoot is eventually unavoidable in a growth-driven world (i.e. Section 1.2.1), which implies that the growth society will ultimately disappear, whether we like it or not. This constitutes the foundation for Serge Latouche's theory of change encapsulated in the "pedagogy of disaster" (Latouche, 2009a, 2014a). According to this idea, disasters and expectations of future disasters may allow us to "pull ourselves together" (Latouche, 2018, mt), transform our social imaginary, and ultimately catalyse change. While this proposition, based on philosophical foundations such as Hans Jonas' heuristic of fear, suggests a possible pathway for a degrowth transition, it is still very much a slogan (Varvarousis, 2019). By relying on an under-theorised notion of crisis, this path of change needs a form of *deus ex machina*, like in Greek theatre, when gods appear on stage during the concluding act to untangle the plot, suddenly resolving a seemingly unsolvable problem. Latouche acknowledges that shocks may instead fortify elite groups (citing Klein, 2008) but does not explain why, aside from stating that "the capitalist oligarchy has to be disarmed and neutralized" (p. 95). It is still insufficient to explain how degrowth pathways could unfold from within the context of capitalism.

In this respect, a deeper engagement with theories of capital and political economy may prove valuable. Recent progress has been made in the political economy of degrowth (Chertkovskaya et al., 2019; Hofferberth, 2021; Koch & Buch-Hansen, 2020; Parrique, 2019; see Chapter 2). In particular, a growing body of knowledge is being created about the policies needed for degrowth (Cosme et al., 2017; D'Alisa et al., 2015; Fitzpatrick et al., 2022; Kallis et al., 2012; Parrique, 2019; van den Bergh & Kallis, 2012). While most of the time, the difficulties, and obstacles to these propositions inherent to capitalist dynamics are not explicitly addressed, a notable exception is Hofferberth (2021), who built a primarily Marxian framework to assess the implications of a range of popular degrowth/post-growth policies. Also, mainly through modelling work, ecological macroeconomists have explored and evaluated a range of economic aspects of degrowth and post-growth policies (Althouse, 2022; Hardt & O'Neill, 2017; see Section 2.2.2). However, despite the advances made in these studies, these scholars have focussed on conceptualising or modelling the *economic* sphere, leaving the *political* realm (from social movements to the state) largely aside (see Section 2.4.1). The study of power

relations and conditions under which degrowth policies may be decided and implemented is only in its infancy (see D’Alisa & Kallis, 2020; Durand et al., 2023; Koch, 2020b, 2022). Furthermore, these institutional reforms with policies are only one element of degrowth strategies (Barlow et al., 2022). Scenarios involving the wider diversity of degrowth transformations, including bottom-up initiatives and ruptural dynamics, as well as their intertwinements with capitalist dynamics, are still crucially lacking. Giorgos Kallis (2018) argues:

“We must create a systematic theory of how existing conditions might evolve towards the vision. Indeed, there is a lot of wishful thinking in the degrowth literature. Yes, there is a vision. Yes, there are policies and there are grassroots communities. And yes, it is possible to develop intuition about how the transition would take place if it were to take place [...]. But are there plausible conditions under which this change could take place?” (p. 142)

In this regard, Kallis (2018) applies a co-evolutionary view to the concept of degrowth by emphasising mutual feedback and selection between various spheres, such as technology, nature, values, knowledge, and institutions (Kallis & Norgaard, 2010; Norgaard, 1994), but does not directly address the role of capitalist dynamics in this shift.

As mentioned earlier, in the literature on degrowth, capital accumulation is often seen as causing growth, but it is not clear how this process forms resistance to the very dynamics of degrowth transformation, and how these transformations might unfold in this context.²³ Rare are the degrowth studies understanding capital from a Marxian perspective that explicitly discuss historical materialism, i.e. Marx’s theory of historical change, based on a combination of crises of the capitalist economy caused by its own internal contradictions and class conflict between the proletariat and the bourgeoisie.^{24,25} One prominent counter-example is Buch-Hansen (2018), who draws on contemporary political economy schools in the Marxian tradition – mainly transnational historical materialism – to identify four prerequisites for paradigm shifts: a deep crisis, an

²³ Boonstra and Joosse (2013) warn against a simplified view of capitalism and degrowth as separate systems, rather than interconnected and hybridising.

²⁴ For Callinicos (1990), “[h]istorical materialism explains social transformations as the outcome of two mechanisms: first, the structural contradictions that arise between the development of the productive forces and the prevailing production relations; and secondly, and only in the context of the socio-economic crises generated by these contradictions, the class struggle” (pp. 112–113).

²⁵ See, for example, Hickel’s (2021a) critique by Baer (2021).

alternative political project, the support of a comprehensive coalition of social forces, and broad-based consent. While significant, this study leaves room for more precision about the conditions to be met for each prerequisite.

The possibility of a degrowth transition amidst a crisis of capitalism is also examined by Tokic (2012), who focusses on the financial sphere and analyses the potential related turbulence during a degrowth transition. He contends that early signs of negative growth due to degrowth policies would force the stock market to fall, resulting in more deleveraging and deflation. Such a scenario, Tokic argues, would inevitably lead to an economic implosion, prompting fiscal and monetary policies that give rise to a new growth cycle and hinder degrowth objectives. However, Tokic acknowledges a limitation in his analysis: it relies on examples of economic crises – undesirable by nature and leaving societal institutions mostly unchanged – rather than examples of planned or intentional degrowth based on qualitative societal changes. Nevertheless, this study is a rare attempt addressing upfront these crucial financial dynamics and political consequences. This demonstrates that understanding the dynamics of the capitalist world in the face of socio-ecological transformations (and vice versa) is a major challenge for degrowth. Klitgaard (2023) remarks:

“The degrowth literature contains little on the resistance the transformation will encounter, not only from workers and consumers, who see their provisions reduced, but from the power of the capitalist class to resist any limitations on their power to accumulate. We should expect such a pushback from capitalists themselves, from a barrage of advertising and media, and from hired politicians.”

In other words, degrowth scholarship has many ideas about why it is crucial to embark on this journey and more and more where society should go; it has sketched out certain stages, but it still lacks a theory of how the transformations of degrowth can unfold and a post-growth society emerge in the face of capitalist adversity – a *theory of change* (see Section 1.3 for a more precise definition). In this vein, Schmid (2019) argues that “[w]hile research on degrowth and postcapitalism collects a large number of compelling examples [...], it lacks convincing conceptualizations of a transformation beyond growth and accumulation” (p. 7).

Similarly, the literature on sustainability transitions, which focusses on socio-technical systems (Köhler et al., 2019), has so far little touched on the issues of degrowth, capitalism, and their intertwinements – exceptions include Feola (2019a, 2019b), van

Oers et al. (2021) and Vandeventer et al. (2019). Feola (2019b) emphasises that the degrowth literature inadequately addresses the “decolonisation of the imaginary” and introduces the concept of “unmaking”, bridging fragmented theories (see also Section 4.4.4), to pave the way for sustainable alternatives to capitalist relations. While the strength of these studies is that they explore precise processes of change, either in theoretical (Feola, 2019b) or empirical ways (van Oers et al., 2021; Vandeventer et al., 2019), they would benefit from complementary, “big picture” approaches for a comprehensive understanding of change from within capitalism. It is indeed unclear “how the transition toward a post-capitalist society could be led by degrowth inspired dynamics of change. In fact, very little has been said about the dynamics of how the degrowth alternative can start materializing within the existing capitalist-growth system” (Vandeventer et al., 2019, pp. 272–273).

For Prieto and Slim (2010), the difficulty of degrowth scholarship in envisioning the transition is largely due to the magnitude of this task. This is indeed a colossal project that should be guided by relevant theories.

1.2.5 Capital as a focal point of analysis

“To change the capitalist world, one first needs to re-conceive it [...] And yet, many contemporary critics of capitalism seem to believe that they can challenge this social order without ever asking how it operates, let alone why.”

— Jonathan Nitzan and Shimshon Bichler (2009, p. 3)

To understand how a society focussed on capitalist growth could transform itself into a degrowth society an essential task is to understand the dynamics of capitalism (Hofferberth, 2021; Spash, 2020). How does capitalism oppose the radical transformations sought by the degrowth movement? Conversely, how may capitalist dynamics leave room for the possibilities of transformation?

This begs the crucial question, what exactly is “capitalism”? There is no agreement on this point. Socialists are credited with introducing the term, viewing capitalism as a system in which individuals with capital exert control over the labour of those without. On the other hand, for its proponents, capitalism often a synonym for

freedom of enterprise (Graeber, 2011, p. 345). Nearly everyone recognises, however, that the *accumulation of capital* is the core engine of capitalism. The central concept of *capitalism* is indeed *capital*. If one agrees, it becomes evident that the starting point for the study of capitalism should be to understand what capital means (Hodgson, 2014; Nitzan & Bichler, 2009).

Therefore, this research addresses not *capitalism* but *capital accumulation*, and it does not take shortcuts to “property”, the “market”, “money”, “growth” or any other (supposedly) capitalist institutions and processes.²⁶ However, what is capital is far from obvious, and its nature remains debated. Capital can be seen as machines or financial assets, material objects or social processes, and static substances or dynamic entities (Nitzan, 2022; see Chapter 2). The way we see capital has far-reaching implications for what the capitalist system is and how it can be transformed. Nitzan and Bichler (2009) state:

“Without a clear concept of capital, we cannot hope to understand how capital operates, why it accumulates or how it drives the capitalist order. Until we understand capital, we are destined to misconceive our political institutions, misjudge our alternatives and have trouble imagining the way to a better future. In short, in order to debate capitalism we first need to debate capital itself”. (p. 2)

Although the concept of capital is frequently cited in the degrowth literature, few degrowth studies define it precisely or reflect on the perspective taken (see Chapter 2). However, without a robust and reflexive understanding of capital and its dynamic of accumulation, it is hard to realise how a degrowth society could unfold.

Thus, it is crucial for degrowth studies to gain a deeper insight into the process of capital accumulation and its relationship with degrowth transformations. As Boonstra and Joosse (2013) contend, understanding these sets of processes as interconnected and “hybrid” is needed to allow a degrowth society to unfold from within (and against) capitalism. However, as I will argue in Chapter 2, the most used concepts of capital in the degrowth literature may remain entrenched within an economic imaginary, that early degrowth proponents, like Latouche, criticised (see Section 1.2.1). By maintaining an analytical divide between economics and politics, degrowth theory risks remaining

²⁶ This research is complementary with Parrique (2019), for example. While the latter offers the most extensive review of the political economy of degrowth and builds scenarios related to property, money, and work, he expands little on capital accumulation.

ensnared by an economic viewpoint, missing the broader power intricacies and interconnectedness between degrowth transformations and capital accumulation. A more intertwined perspective, such as Capital as Power (Nitzan & Bichler, 2009) and interdisciplinary insights, may be valuable to better comprehend the challenges and pathways for degrowth transformations. It would allow to explore in a processual and holistic way how capital accumulation is intertwined with the multifarious degrowth transformations – from alternative practices to institutional reforms and oppositional activism – and how degrowth can unfold in this context.

1.3 Aims of this thesis

This thesis embarks on an explorative journey, seeking to provide a holistic understanding of how degrowth transformations can unfold in the face of the encompassing process of capital accumulation. The pivotal aim of this research is to identify key dynamics contributing to a theory of change for degrowth against the process of capital accumulation. According to Serrat (2017), a “theory of change is a purposeful model of how an initiative – such as a policy, a strategy, a program, or a project – contributes through a chain of early and intermediate outcomes to the intended result. Theories of change help navigate the complexity of social change” (p. 237). In the context of this research, the dynamics for a theory of change serve as dual-purpose tools. They highlight avenues where dynamics could lead to transformative, degrowth-oriented changes, while simultaneously identifying zones of resistance where dominant forces are likely to endure. Similar to other researchers studying social change (e.g. Shove et al., 2012), I consider both transformations and resistance to (or inhibition of) change as dynamic processes, as two faces of the same coin. This exploration of yet-to-become possibilities is in line with what the philosopher of science Roberto Poli (2017) calls “future-generating” research, which raises difficult questions “about possible futures and how to realize them” (p. 4).

As underscored in Section 1.2, degrowth studies have insufficiently explored the potentials and challenges for degrowth transformations in the face of capital accumulation, and too unholistically. The research question asked in this thesis is as follows:

How can degrowth transformations unfold against the process of capital accumulation?

This question is addressed through three interrelated tasks:

1. Developing a holistic understanding of the process of capital accumulation in relation to degrowth (Chapters 2 and 3).
2. Assembling elements of dynamics that explain, in different aspects, how degrowth transformations can undermine capitalist power, while being inhibited through the process of capital accumulation (Chapters 3 and 4).
3. Connecting the dynamics identified and developing pathways reflecting on how degrowth transformations could unfold, or not, against the process of capital accumulation (Chapter 5).

In this way, I seek to contribute to the nascent and transdisciplinary field of degrowth studies while assembling diverse insights from ecological economics, political economy, social theory, futures studies, philosophy, and systems thinking (see Section 1.4.5).

Note that this question seeks to explore *possible* dynamics between degrowth transformations and capital accumulation, and not whether or how degrowth transformations *should* unfold. In other words, this research looks at potential processes by which degrowth transformations might unfold or conversely, be inhibited, in a society where capital accumulation prevails. It illuminates the dynamics of capital accumulation and how this process intertwines with societal shifts towards degrowth. Therefore, this research does not seek to establish a ready-to-use agenda for degrowth advocates.

Nonetheless, proposing well-articulated dynamics at the conceptual level and illustrative scenarios may further facilitate an in-depth understanding of given situations and the imagining of unexplored possibilities for the future. Therefore, while being part of an academic conversation grounded in degrowth studies, I hope that this work can also indirectly offer food for thought for those who are willing to bring about socio-ecological transformations.

1.4 Research process

1.4.1 Onto-epistemology and ethics

In this section, I delve into the ontological and epistemological foundations of my research, exploring how they are shaped by a process-relational perspective and how they shape my ethical approach to understanding and interacting with the world.

My ontological and epistemological perspective has gradually emerged through the study and use of theories that conceive reality as a series of dynamic, evolving processes and relations. This research has come to be inspired by the central tenets of process philosophy, which has been popularised and developed with the seminal work of mathematician and philosopher Alfred North Whitehead (1929/2010), as well as contributions from other notable thinkers such as Henri Bergson (1907/2013), Charles Hartshorne (1970), Gilles Deleuze (1968/2011) and more recently, Isabelle Stengers (2011), Bruno Latour (2007) and prominently, C. Robert Mesle (2008). Process philosophy is usually viewed as:

“an effort to think clearly and deeply about the obvious truth that our world and our lives are interrelated, dynamic processes and to challenge the apparently obvious, but fundamentally mistaken, idea that the world (including ourselves) is made of things that exist independently of such relationships and that seem to endure unchanged through all the processes of change.” (Mesle, 2008, p. 8)

In other words, for process thinkers, there is no such thing as true stasis. Process philosophy – or process-relational philosophy (Mesle, 2008) – emphasises the idea that everything is constantly changing, rather than stability and immutability. Process philosophy suggests that the world must be understood as an interconnected web of processes and relations,²⁷ rather than as based on the interactions of static objects with fixed properties and clear boundaries:

“We are faced with a vast, complex world in which we encounter a wide range of interconnected problems. The better our ideas are at helping us to see how the world and those problems are interconnected, the more successfully we can work to solve our problems.” (Mesle, 2008, p. 15)

Creativity is considered at the heart of our constantly shifting reality, the future of which is not determined. Each event, the process, and even lifeless object emerges from and holds the capacity for creativity. Process thought considers it deeply ingrained in the essence of existence, marking it as a vital element of the nature of all things.

²⁷ Process philosophers see processes as being made up of interconnected *events*, which is the most basic unit of reality. It is something that can be experienced and distinguished from the constantly changing world. However, events have unclear boundaries because they comprise other events. Processes that come from wide-ranging realms are together what causes events to happen (Hertz & Mancilla Garcia, 2019).

As partners in a continuous process of becoming, both humans and nature are constantly evolving, interrelating entities in a dynamic process. As Mesle (2008) summarises,:

“Especially since Charles Darwin, it has become increasingly clear that we are part of the natural world, that we are completely interwoven with everything. [...] We cannot understand ourselves without understanding the world of which we are a part; nor can we finally understand the world without understanding ourselves as part of it.” (p. 24)

In other words, in this view, humans and nature are not distinct entities but integral parts of a web of relations. Changes in one part will inevitably lead to changes in the other. When I use the term “society”, I do not mean a set of individuals but a group of relations, which include relations between humans and non-humans:

“Clearly, we cannot simply look around and see individual actual entities any more than we can look around and see individual electrons or quarks. The objects we see in the world would be examples of what Whitehead called *societies*. These range from the subatomic level to “crystals, rocks, planets, and suns” (PR 102) and also include living organisms. [...] A society is a group of actual entities connected in specific ways. Mainly, they share certain “defining characteristics” in ways that enable the society to hang together (PR 89).” (Mesle, 2008, p. 106)

In practical terms, my research focusses mainly on dynamic processes of change in line with and against principles, rather than finite states (e.g. “what a post-growth society should look like”, blueprints). While moving from onto-epistemologies of substances, which predominate in Western societies, to onto-epistemologies of processes is an ongoing challenge, I attempt to shift my emphasis from an understanding of the world made of objects with fixed properties (e.g. the accumulation of capital as “capital goods”, see Chapter 2) to change processes. I approach resistance to degrowth transformations engendered by capital accumulation as fluid processes rather than static constraints.

However, it is important to acknowledge that the language used throughout this thesis might sometimes appear to be in tension with process onto-epistemologies. This is largely a result of the inherent challenges posed by attempting to articulate concepts deeply embedded in a linguistic framework dominated by ontologies of substance. While significant efforts have been made to stay true to the principles of process philosophy, the constraints of prevailing academic language may occasionally lead to the use of terms

that evoke static entities rather than dynamic processes. Readers are encouraged to interpret the vocabulary used within the broader context of the research objectives and the overarching emphasis on processual understanding.

Process philosophy underscores the inseparable nature of ontology and epistemology. Researchers are not merely objective interpreters of external processes. Instead, processes and relations are contingent upon an observer's presence and perception, thus reflecting their interdependent and entwined nature (Mancilla García et al., 2020). While I am critically investigating capital accumulation, my own existence is deeply embedded within capitalist dynamics. Consequently, like many, my worldview and understanding of these processes are conditioned by the pervasive symbols, concepts, ideologies, and material infrastructures of capitalism, as well as by situated critiques of these elements. The principles put forward by the degrowth movement, including degrowth scholars, tend to arise from “the well-educated European middle class that share progressive-green-cosmopolitan values” (Muradian, 2019, p. 257). These elements inevitably shape my ability to comprehend and analyse the very process I seek to investigate. My way of addressing some of these biases is to explicitly question the core concept of capital and comprehensively consider alternative perspectives (see Chapters 2 and 3). As Nitzan (2022) contends, the way we define capital “attests [to] our theoretical biases, ideological disposition, view of politics, class consciousness, social position, and more” (p. 1).

In that sense, the interconnectedness of epistemo-ontology and *ethics* is evident in research: researchers inevitably bring their own values, beliefs, and biases into the research process; their ethics influence, for instance, the questions they investigate, the delineation of the processes examined, and how they study them. Recognising and openly addressing these influences is crucial. My personal beliefs include the need for systemic, transformative change towards environmental sustainability and social justice, similar to most degrowth researchers. However, I have also striven to maintain critical distance by continually questioning and challenging these convictions throughout my research. It is a process that requires both introspection and a willingness to engage with perspectives that might diverge from or even contradict my own – coming from an initial engineering background, many of my representations of the dynamics of the socio-environmental world and how they should be transformed did profoundly changed during this process.

By doing so, I ensure that my personal convictions do not predetermine the outcomes of my research.

Inspired by process philosophy, I believe that understanding the context and processes through which knowledge is generated is crucial, rather than simply focussing on the end product of that knowledge. The next sections attempt to make these processes and the context explicit.

1.4.2 Theorising trigger

Recognising that reality is constantly changing also means being adaptable and open to change in the way we undertake research. This research began with an exploratory investigation into cooperatives and sustainable food systems in Brussels and Wallonia (Belgium). In 2016 and 2017, I conducted 20 semi-directed, exploratory interviews with founders, employees, and members of 10 social economy initiatives (mostly related to food), as well as 50 hours of observing participation as a worker member in a cooperative supermarket in Brussels and participating in various related events.

The idea was, however, not to remain focussed on grassroots dynamics but to study links between micro and macroscales. In that context, through a qualitative study with my colleague Jérôme Pelenc, I analysed how three different Belgian cooperatives challenge capitalist principles and contribute to re-embedding (Polanyi, 1944/2001), in various ways, the economy in society (Vastenaekels & Pelenc, 2018, 2020; see also Box 1 in Section 4.3.1). This gave me a sense of the effort being made by citizens to transform society towards sustainability. I observed the well-known tension between their socio-ecological values and principles and the various difficulties they face when they attempt to implement them in practice in a society dominated by market and capitalist logics.

However, I was troubled by the discrepancy between the enthusiasm generated by these initiatives in some circles (in addition to the prolific research about them) and the hopelessness of their marginality when looking at the big picture. Shepherd and Suddaby (2017) call this a “theorising trigger”, a tension motivating the remainder of the theorising process. In that context, I wanted to investigate how and under which conditions this type of action could play a role in large-scale transformations towards a sustainable society. Could they bring about a systemic change? This led me to explore more fundamental power processes shaping our capitalist societies – notably by reading on theories of capitalism, heterodox economics, degrowth, social theory, anarchism, corporate power,

and the food system – and to detach myself from the empirical field that I had previously entered.

The question addressed in Vastenaekels and Pelenc (2020) was therefore somehow reversed to become “How does capitalism contribute to socio-ecological alternatives’ inertia and marginalisation?” To undertake this investigation, I decided to take a degrowth perspective that encompasses the support for small-scale alternatives but situates them in a larger project beyond capitalism (as explained in Section 1.2). I finally arrived at the question of the unfolding of degrowth against capital accumulation and the development of a combination of theoretical perspectives.

1.4.3 Theoretical perspective

1.4.3.1 A holistic and interdisciplinary perspective

If “proposing alternative economic models is not enough” (Kallis, 2015a) to effect a degrowth transition, an important task for degrowth theory is therefore to develop an understanding of capitalism that moves beyond pure economic thinking. For this purpose, I develop a holistic and interdisciplinary combination based on two approaches, Capital as Power (CasP) (Nitzan & Bichler, 2009) from political economy and Social Practice Theory (SPT) (Reckwitz, 2002; Schatzki, 2002; Shove et al., 2012) from philosophy and sociology. On the one hand, CasP understands capital as a direct representation of power, and its accumulation as an all-encompassing power process where economic, political, and social forces intertwine (it is extensively discussed in Chapter 3). This means that the accumulation of capital is not primarily an economic process focussing on producing goods, exploiting labour, and earning profits, but a broader and more complex process of power where dominant capital groups attempt to shape and control society and nature while facing opposition. A dialogue between CasP and degrowth helps define key elements of dynamics of how degrowth transformations can occur in the face of capital accumulation.

However, other concepts are needed to comprehend in more depth how degrowth transformations can be inhibited, obstructed, or sabotaged by dominant capital groups. Therefore, this research also builds on the rich insights of SPT, combined with Erik Olin Wright’s (2010) typology of modes of transformation: interstitial (typically, alternative initiatives), symbiotic (typically, institutional reforms), and cultural transformations (i.e. oppositional processes) – introduced in Chapter 4. SPT is a sociological and

philosophical approach that seeks to understand the actions of individuals and groups by focussing on practices – involving habits, meanings, skills, material objects – as the dynamics of social life. This study aims to explain how these practices emerge, evolve, and disappear over time. By conceptualising in terms of practices the building of grassroots alternatives (interstitial transformations), the enforcement of institutional reforms (symbiotic transformations) and oppositional activism (ruptural transformations), it is possible to explore the role of capital accumulation in inhibiting degrowth transformations. Thus, this research proposes a typology of four modes of sabotage of socio-ecological change. The dynamics between the modes of transformation and sabotage are further synthesised in two dynamics for a theory of change.

1.4.3.2 A few words on the emergence of this perspective

This combination of perspectives emerged throughout the research process through the connection of multiple evolving reflections based on different literature and approaches. I imagine these reflections as explorations of islands, as well as the search for links between these islands: Indeed, “[d]eeper down, even islands, like waves, are merely faces of a deeper unity” (Mesle, 2008, p. 9). Although they are all part of the research process in one way or another, I do not wish to describe the many islands that turned out to be too disconnected from what became my main thread; I will only focus on the three main ones that have led directly to the theoretical perspective described above.

First, an important exploration took off when I read Howard’s (2016) *Concentration and Power in the Food System: Who Controls What We Eat?*, which employs, to some extent, Jonathan Nitzan and Shimshon Bichler’s theory of CasP. This work led me to their book (Nitzan & Bichler, 2009), which, although not immediately understood, clarified several questions I had been pondering and, more importantly, opened up new ways of thinking about the dynamics of capitalist societies. Through revisiting Nitzan and Bichler’s work and engaging with a wealth of related literature on political economy (notably the work of Thorstein Veblen) and beyond, my understanding of their propositions deepened, and it gradually became apparent that their theory would be central to my thesis. While it took time to discern where this insight would lead me, I became convinced that it could bring fresh ideas to the degrowth debate, particularly given the lack of engagement between degrowth and CasP perspectives (and vice versa). This theory particularly appealed to me because it focusses on understanding the

worldviews and actions of powerful coalitions²⁸ – a blind spot in much of the research on degrowth and ecological economics more broadly.

Second, Latouche’s idea of “escaping the economy” has been highly stimulating – in particular, the related invitation to understand the world without relying on a self-referential sphere of economic representations, which I liken to a conceptual “fly bottle” (see Section 2.4). In other words, “the economy” does not exist as a tangible, self-contained entity, but rather as a discourse and part of our social imaginary that contaminates social practices (Castoriadis, 1975/1998). I agree with the ecological economist Simon Mair (2022) when he states: “In my efforts to learn about the economy I came to believe that there was no such object” (p. 1461). Similar to anthropologist Dusan Kazic (2022), I have gradually embraced the idea that we should cease distinguishing economic dimensions in everything,²⁹ thereby bringing politics to the fore. Assuming that the economy can be understood as relatively autonomous from the broader social and ecological context obstructs the reintegration of “economic” processes in society and nature. This reductive perspective also restricts our understanding of how a post-growth society can be established (Fournier, 2008; Kallis, 2015a). From this viewpoint, degrowth scholarship must equip itself with consistent theoretical lenses without falling into the traps of economism. It is essential if we want to develop a processual understanding of transformations starting from within capitalism. In this regard, the critique of economic representations embodied in the idea of “escaping the economy” resonates with CasP’s assumption that capitalism is not primarily an economic system or mode of production, but rather a broader mode of power; and that economics and politics cannot be meaningfully distinguished when looking at its core dynamics. At the very least, attempting to move beyond this divide fosters creative thinking, which is valuable in itself.

Third, I consistently aimed to establish connections between encompassing capital accumulation’s power dynamics and degrowth transformations at more localised levels.

²⁸ Aside from the research work, it led me, for instance, to start reading the financial press every day to better understand how investors “see” the world.

²⁹ For Dusan Kazic (2022), “[t]o get rid of the economy, the first thing necessary – the simplest and most difficult – is to become ‘eco-agnostic’; not to believe what Economics says about the world. There should be a kind of motto for the worlds after production: nothing is economic. We must never accept the statement that there is always an economic dimension to any subject. It is a question of getting rid of the old based on the material evidence of the economy, divided between the existence of an essential reality on the one hand and social and ecological dimensions on the other.” (pp. 485–486, mt)

To achieve this, I employed a combination of Wright’s (2010) typology of modes of transformation and SPT (Reckwitz, 2002; Schatzki, 2002; Shove et al., 2012). Both and CasP, along with SPT, transcend the divides between economic/political and cultural/material (Jaeggi, 2018), resulting in a complementary relationship among these approaches. In the next section, I elaborate on my research strategy and methods.

1.4.4 Research strategy and methods

The investigation I develop in this thesis is mainly conceptual, i.e. it attempts to propose new connexions between concepts, to make logical and complete arguments about these instead of testing them against new empirical data (Gilson & Goldberg, 2015; Jaakkola, 2020; see also Section 1.4.5). The arguments developed in this thesis have surfaced in an organic way, as an iterative journey, in which I discovered that certain avenues were dead ends and where creativity was required to find new ways to explore. I did not start with predefined theory building methods; they have emerged according to the tasks addressed. In the second step, I could relate what I was doing intuitively at first with documented procedures, which was helpful to refine my approach and reflect on the type of knowledge generated.

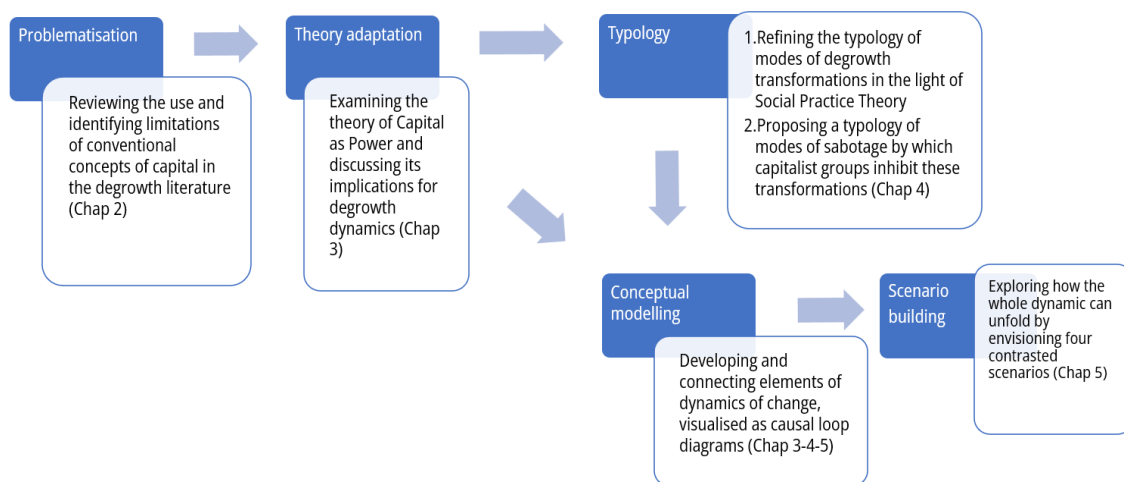


Figure 1. Assemblage of theory-building methods

The methods I used for theory building were problematisation, theory adaptation, typology building, conceptual modelling and scenario building (synthesised in Figure 1). In the remainder of this section, I broadly describe these processes, and more details on how I put them into practice are provided in each chapter.

1.4.4.1 Problematisation (Chapter 2)

Problematisation was realised in Chapter 2 to explore the ways in which concepts of capital accumulation in degrowth scholarship illuminate the unfolding of degrowth by revealing some of its underlying assumptions and challenging them.

According to Chatterjee and Davidson (2021), to problematise, “authors develop their own worldview of the existing literature in their domain and use that worldview to critique existing research traditions in that domain” (p. 228). In my case, this worldview finds its source in degrowth’s critique of economism (Fournier, 2008; Latouche, 2009a, 2011) and in the critique of political economy by Nitzan and Bichler (2009).

Problematisation seeks the creation of more complex and sophisticated ideas and ways of comprehending and resolving the issue at hand. It allows new views on a specific subject to be unearthed or established understandings of a problem to be questioned. It is also a precondition for theory adaptation, as described below (Jaakkola, 2020).

1.4.4.2 Theory adaptation (Chapter 3)

Theory adaptation refers to the process of refining an existing body of knowledge – in this case, degrowth’s conceptualisation of capitalism – by integrating a new perspective – for instance, the theory of CasP. This process follows the revisitation and critique of a certain theory or concept, such as capital, embedded within the original framework (Jaakkola, 2020), as outlined in Section 1.4.4.1.

The need for theory adaptation typically arises from the need to address discrepancies within the existing theory or to enhance the theory’s alignment with its objectives. In the context of degrowth research, the objective is to instigate socio-ecological transformations while “decolonising” our imaginaries from the economy (Fournier, 2008).

To facilitate this shift in understanding, it is common to draw upon a distinct theoretical viewpoint or worldview. In Chapter 3 of this study, this transformation process is guided by the CasP theory proposed by Nitzan and Bichler (2009).

1.4.4.3 Refining and defining typologies (Chapter 4)

Chapter 4 serves two main purposes. First, it refines a typology of modes for degrowth transformation, employing the lens of SPT to detail how these modes operate. Second, it defines a typology of processes that could potentially impede these modes of transformation, thus facilitating a better understanding of different facets of the

encompassing concept of “strategic sabotage” (as described by Nitzan & Bichler, 2009, following Veblen), which was introduced in Chapter 3.

The purpose of a typology study, as described by Cornelissen (2017), is to develop a classification system that simplifies complex, multifaceted subject matter by logically and causally integrating various conceptions into a unified, explanatory set of categories. The development of a typology illuminates and rationalises key differences among variations, resulting in a more precise and nuanced comprehension of a particular process or idea (Jaakkola, 2020).

Typologies showcase how different instances of a subject diverge from each other. They also assist in understanding the unique causes, manifestations, and potential outcomes of a concept (MacInnis, 2011). Beyond this, typologies provide a more profound understanding of a phenomenon or concept, paving the way for empirical research by serving as a foundational framework

1.4.4.4 Conceptual modelling with causal loop diagrams (Chapters 3-4-5)

This thesis proposes six interconnected elements of dynamics that together form a theory of change for degrowth, providing a comprehensive understanding of the complex phenomenon under study. A theory of change is based on a conceptual model, a tool that helps describe and analyse a specific process by identifying its characteristics and key factors. Conceptual models can describe a process’s operation, identify contributing elements, and examine outcomes and contingencies related to the central concept. They can also uncover unknown connections between concepts, introduce new ideas or constructs, or explain why specific elements of a process lead to certain outcomes (Jaakkola, 2020). Conceptual models are particularly useful for examining emerging phenomena with limited empirical data and allow the hypothesising of the dynamics between connected concepts (MacInnis, 2011).

In this research, I develop causal loop diagrams (CLDs) to communicate the theory of change’s elements of dynamics. CLDs serve as an effective instrument in comprehending intricate processes and pinpointing entry points for transformations. They represent a visual tool that represents the key relationships between concepts in a dynamical system. In this sense, CLDs are particularly valuable for developing conceptual models because they allow researchers to graphically represent complex

interconnections. Ultimately,, they help tell storeys about possible evolutions of the dynamic (Barbrook-Johnson & Penn, 2022; Haraldsson, 2004).

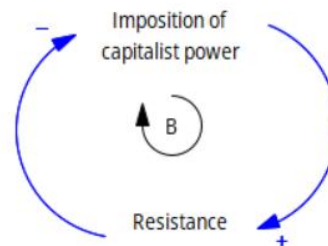


Figure 2. Simple illustration of a causal loop diagram with a balancing loop

Figure 2 presents a simple CLD illustrating the relationship between two variables: *the imposition of capitalist power* and *resistance* to it. In this CLD, the arrows denote the direction of influence between the two variables. Here, the imposition of capitalist power positively influences resistance, whereas resistance negatively influences the imposition of capitalist power. This CLD represents a balancing feedback loop. Conversely, a reinforcing loop includes variables that positively influence each other. As capitalist power intensifies, resistance increases, potentially weakening the imposition of capitalist power. Conversely, as the imposition of capitalist power decreases, the need for resistance declines, possibly associated with a further increase in the imposition of capitalist power. Importantly, arrows indicate potential and provisional causal relationships with indeterminate intensities, not static laws. This feedback loop can continue indefinitely, with the imposition of capitalist power and resistance fluctuating as they influence each other. Although a simplistic example, this CLD demonstrates the basic concept of representing relationships between variables or concepts in a system.

The key steps in the assembly and analysis of a CLD can be summarised as follows:³⁰

1. Identifying the key variables relevant to the process under examination. These variables often processes themselves in the CLDs I develop.

³⁰ See, e.g. Bala et al. (2017), Haraldsson (2004), and Tomoaia-Cotisel et al. (2017).

2. Determining the direction of influence between variables, which may be positive, negative, or non-significant. Some links can be marked with a delay (noted “//”) when one or both variables move substantially more slowly than the remainder of the system (Haraldsson, 2004).
3. Identifying feedback loops within the process, which can be either balancing (“B”) or reinforcing (“R”). They represent relations between variables that reinforce or balance each other over time.
4. Using the diagram to develop hypotheses about the dynamic’s evolution over time.

On the whole, CLDs offer a valuable approach to understanding complex dynamics. They share similarities with process philosophy in terms of embracing dynamism and viewing processes in which the whole is greater than the sum of the parts. However, I must also acknowledge and address inherent limitations when it comes to CLDs’ alignment with the onto-epistemological stance of this research. Indeed, CLDs can veer towards reductionism by breaking dynamic systems into individual elements; while this is inherent to any kind of modelling or theorising – one may always argue that there is a broader “whole”. While a balance has to be found between holism and reductionism, it is critical to recognise that a CLD is a simplified depiction of a dynamic and cannot capture every aspect or nuance. The assumptions underlying the dynamics represented are fundamentally debateable

In addition, CLDs draw on relationships that could be considered static. While a CLD may depict fixed relationships for simplicity and readability they can and do change over time, due to the system’s internal dynamics or external influences. Thus, it is important to consider CLDs not as definitive systems (see Preiser & Cilliers, 2010) but as tools for fostering understanding and dialogue. They can be iteratively refined as we learn more about the dynamics.

Finally, with their causal relationships, CLDs could also be suspected of determinism or mechanicism. However, it should be noted that the outcomes of a dynamic modelled with a CLD may still be difficult, if not impossible, to predict; a single CLD can lead to contrasted outcomes. This is notably due to the fuzzy nature and unspecified intensity of causal relationships formalised within the diagram, which leave a large degree of uncertainty. Specifically, CLDs, under the lens of process philosophy, can

be interpreted as maps of potential processes within a system. They represent parts of a “possibility space” that “defines the set of processes and their interactions that are possible at any given moment” (Hertz et al., 2020, p. 333). Variables and causal links are potential events and processes waiting to happen. When they do, these processes change, in turn, the possibility space. The future that unfolds depends on the potential events that are gradually becoming. This illustrates how unpredictable and creative complex systems can be. Thus, while helping navigate the complexity of the world, CLDs still embrace indeterminacy – which can be communicated with scenarios, as proposed in the next section.

1.4.4.5 Scenario generation (Chapter 5)

This thesis then delves into the complex interplay between degrowth and capital accumulation by transcending the individual dynamics presented as CLDs in Chapters 3 and 4. A holistic approach was adopted, examining the relationship between these concepts through a CLD and engaging exploratory scenarios. As simplified representations, CLDs can yield various potential trajectories (Barbrook-Johnson & Penn, 2022; Haraldsson and Bonin, 2021). Chapter 5 integrates the six CLDs and explores possible future scenarios.

Four exploratory scenarios are developed to illustrate the unfolding of degrowth transformations against the process of capital accumulation. Presenting complex information accessibly, these scenarios can foster discussion and debate on future trajectories. Drawing on key dynamics, uncertainties, and assumptions about the trajectories, these fictional narratives represent *possible* futures rather than predictions (Poli, 2019). This approach presents a range of possibilities, enabling readers to better understand and engage with the ideas underpinning the theory of change and its implications.

1.4.5 Lines of demarcation

I finish clarifying my approach by stressing what my thesis is not: it is not a thesis in economics, but an interdisciplinary endeavour; it is not about the “what” and “why” of degrowth, but some aspects of the “how”; it is not mainly empirical research, but theoretical and, to some extent, speculative.

First, while my research focusses on the dynamics between degrowth and capital accumulation, it should be noted that it is not a thesis in the discipline of economics – I

have realised this PhD within a highly interdisciplinary unit of research on socio-environmental dynamics.³¹ This thesis seeks to contribute to the conversation of the nascent field of *degrowth studies*, taken as an open, issue-driven, transdisciplinary field developing degrowth’s research programme (see Section 1.2.2). Kallis (2018) contends that “degrowth is not an economic theory, much less a theory of economic contraction. Degrowth transcends single disciplines” (p. viii). This research embraces the interdisciplinarity of degrowth scholarship. However, for clarity, it is worth elaborating on its positioning. The theoretical core of this thesis is situated in the *political economy* of degrowth and *ecological economics*. Indeed, the relationship between aspects of degrowth and capital accumulation has been investigated in several studies of these (sub-)fields. I initially examine degrowth and growth-critical studies using the concept of capital (Chapter 2). Then, I put elements of CasP, which is a *radical political economy* approach, in dialogue with degrowth to define dynamics for a degrowth’s theory of change (Chapter 3). I have completed this core by using insights from SPT (Chapter 4), a *social theory* used by some ecological economists (e.g. Petit et al., 2022; Smith et al., 2021) and Wright’s (2010) typology of transformations, which lies at the crossroads of *social theory* and *political economy*. In Chapter 5, I explore future scenarios using methodological insights from *Futures Studies*. From a methodological viewpoint, I design the dynamics for a theory of change with CLDs (in Chapters 3, 4 and 5), which stem from *systems thinking* (Barbrook-Johnson & Penn, 2022). Finally, the onto-epistemological basis of this thesis is inspired by principles of *process philosophy*. The term “inspired” is crucial here, as all the aforementioned fields constitute inspirations, influences, and not a strict canvas upon which the research is painted – while my own contribution is not primarily oriented towards any of these but towards degrowth studies.

Second, the focus is on the “how” of degrowth, rather than the “why” or “what”. In other words, this thesis does not elaborate on the definitions, fundamental motivations, desirability, or goals of degrowth – other degrowth scholars have already comprehensively achieved that (e.g. Parrique, 2019, 2022; Schmelzer et al., 2022). I focus on the ways in which it can be realised or hindered. I do not undertake this by assessing the merits and implications of a range of policies and proposals (blueprints) for

³¹ The Socio-Environmental Research Group (Université libre de Bruxelles) and its predecessor, the “Centre d’Etudes du Développement Durable”.

degrowth. Although further work is needed, degrowth scholars have already put some effort into this area (e.g. Cosme et al., 2017; Fitzpatrick et al., 2022; Hardt & O’Neill, 2017; Hofferberth, 2021; Kallis et al., 2012; Parrique, 2019). Acknowledging that clear, appealing, and sound degrowth propositions are not enough to effect change, I investigate how capital accumulation (i.e. not *capitalism* as a whole) inhibits the very possibilities of change for degrowth in its multiple facets (including alternative practices, reforms and opposition), while reflecting on how degrowth transformations might still unfold in the face of it.

Third, in this thesis, my focus is not empirical, but primarily theoretical, in the sense that I do not aim to test hypotheses or draw conclusions based on newly collected empirical data. I seek to explore, clarify, and connect existing evidence, concepts, and theories that potentially inform our understanding of the potential unfolding of degrowth from within capitalism. This choice was far from obvious, as I started with a qualitative, exploratory inquiry in small-scale alternatives (as explained in Section 1.4.2), which motivated and conditioned the questions investigated in this study. At some point, I made the choice to explore the core driver of capitalism – capital accumulation – and the key processes through which they intertwine with degrowth transformations. The passage through a theoretical exercise became indispensable, which is similar to other PhD theses in ecological economics addressing capitalist dynamics from other perspectives (e.g. J. Hinton, 2021; Hofferberth, 2021; Pirgmaier, 2018). Nevertheless, I am constantly trying to avoid losing touch with empirical facts, as I use theories that are themselves empirically grounded and regularly refer to empirical studies to illustrate my arguments, notably with an emphasis on food system transformations (see Section 4.5).

Fourth, this research is a form of speculative gesture (Debaise & Stengers, 2015) – engaging with the world as it is, but with an openness to the possibilities that it might contain. This is an adventurous, exploratory type of research. Future-oriented, speculative thinking involves an exploration of what could be. It is primarily an opportunity to explore beyond established boundaries while facing a situation that requires it. The investigation of degrowth practices alternatives, resistances and policies – all still in their infancy – inevitably requires a degree of conjecture. Speculative thinking is one of the central elements of process philosophy, enabling me to delve deeper into understanding the world and its ongoing processes: “Whitehead isn’t just wondering about how everything that exists is connected, but about how everything *that could exist* is

connected. That is a very bold quest” (Mesle, 2008, p. 12; emphasis added). With a transparent and rigorous theorising process (see Section 1.4.4), I am able to draw insightful hypotheses and envision new ideas and possibilities, thereby complementing traditional, deductive or empirical approaches. The need for speculation in the context of degrowth has also been emphasised, for example, by Herbert et al. (2018), who cautioned that an overreliance on past empirical evidence can limit potential strategies to those that have already been tried. In this regard, my research not only fills an important gap in our understanding but also opens up new avenues for potential pathways. My speculative findings remain flexible and are prepared to evolve as new empirical evidence emerges. Hence, this research engages with degrowth thinking in a robust, transparent, and reflexive manner.

1.5 Plan of the thesis

In **Chapter 2** (*Degrowth, capital and the escape from the economy*), the thesis begins by exploring how the concept of capital is conceived in the degrowth literature and how it informs the achievability of such a transition from it. Degrowth scholarship tends to interpret capital either (i) as a stock of machines, tools, and other goods used to produce other goods, or (ii) in its Marxian version, as a social relation of production, describing an exploitative relationship between capitalists and workers. These conceptualisations view capital as a productive entity and consider the economy as interdependent but analytically distinct from a political, non-economic sphere driven by wide-ranging forms of power relations. As a result, degrowth transformations tend to be analysed separately from an economic or political/societal perspective. This duality hinders degrowth scholarship from escaping the economy’s grip on our social imagination and prevents a holistic understanding of the interactions between capital accumulation and degrowth transformations.

As a potential solution, in **Chapter 3** (*Capital as Power and degrowth: A dialogue*), I explore another theory of capital, CasP, and consider it in a discussion with the degrowth literature to identify implications for the unfolding of . Still absent from the field, this recent theory breaks with some of the fundamental premises of economics and political economy, including the famous economic/political duality. This theory of accumulation sees accumulation as a process that redistributes power over society. For this logic to exist, capitalist groups must constantly impose it and thus face multiple forms of opposition. As a result, studying the unfolding of degrowth in the face of capital

accumulation involves exploring the capacities of dominant capitalist groups intertwined with government organs to counter processes of change, which are called “strategic sabotage”, following Veblen. Building on these insights, this chapter offers four elements of dynamics for the theory of change visually offered as CLDs.

Chapter 4 (*Trouble on the paths of socio-ecological change*) investigates the processes of “sabotage” that contribute to hindering degrowth transformations. I start from the different *modes of degrowth transformation*, which can be classified, following Wright (2010), into three modes: 1) *interstitial transformations*: essentially, the development of “nowtopias”, concrete alternatives that develop socio-ecological principles on the ground and which become lodged in the interstices of capitalist society; 2) *symbiotic transformations*, i.e. the willingness to defend reforms that will advance degrowth ideas in existing institutions while accepting their limits; and 3) *ruptural transformations*, which challenge capitalist processes and relations more frontally. Based on SPT, I refine this typology and identify four types of dynamics, or *modes of sabotage*, that inhibit degrowth: 1) *hierarchical complexification*, the creation of capitalist activities with ever-closer links of codependence with each other and with those established by partners and government organs; 2) *saturation of the interstices*, which limits the possibilities in terms of the development of practices by individuals; 3) *capture*, the (partial) recuperation of alternative practices and proposals, integrated into capitalist practices, for the benefit of accumulation; and 4) *rupture*, which more frontally targets the continuity of alternative, reformist, and contesting practices. The conceptualisation of these processes produces two further elements of dynamics for the theory of change, which are described as CLDs. I illustrate these dynamics with examples from the food system, where socio-ecological alternatives are struggling to develop in the face of the sector’s behemoths.

Despite these capacities of capital to hinder or prevent degrowth transformations, there is no determinism about the possibility or otherwise of a transition to degrowth. **Chapter 5** (*The (non-)unfolding of degrowth: From the elements of dynamics to alternative pathways*) combines six elements of dynamics in the form of CLDs developed in Chapters 3 and 4 to study the implications of the processes described in these chapters. In exploring future scenarios of the interplay between degrowth transformations and capitalist power, four distinct paths emerge: First, the “transformative efforts in the shadows of dominant capital” envisions a future where dominant capital groups retain

their grip on socio-ecological processes, making a shift to degrowth difficult. This highlights the dynamics of differential accumulation and sabotage. Second, in the “dance between emerging degrowth practices and ‘greener’ rulers”, degrowth transformations arise alongside socio-environmental shifts, leading to the spread of degrowth principles. However, these principles are subject to manipulation by dominant groups, resulting in a reshuffling of power within dominant capital. Third, “navigating the tides of post-growth capitalism” sees growth’s importance wane, but dominant capital adapts by focussing on “depth” accumulation cycles, challenging the notion that post-growth capitalism is contradictory. Finally, the “holistic degrowth shift” presents a future where degrowth transformations gain prominence, leading to a rapid transition away from growth and undermining the hierarchical power of dominant capital. These scenarios facilitate a comprehensive understanding of potential degrowth pathways against capital accumulation.

Finally, **Chapter 6** (*Conclusion*) provides a synthesis of the findings and discusses their implications. Building upon the insights from the previous chapters, this study identifies key limitations of this research and suggests avenues for further exploration, navigating the tension between *breadth* and *depth* in theory building. It concludes with final reflections on the process, advocating for a more central treatment of power relations in the reflection on degrowth pathways.

2 Degrowth, capital and the escape from the economy

“Despite the damning articles and reports that are accumulating day by day on the catastrophic state of the Earth, it is still a question of associating production and the economy with ‘everything else’. With this way of thinking, environmental protection will never take precedence over production. This reasoning gives a dizzying power to Economics in our other-than-human world. Economics always has the last word, putting an end to all scientific, ecological and political discussion. It has made itself indispensable in deciding how we should think and live on earth.”

— Dusan Kazic (2022, p. 477, mt)

2.1 Introduction

In a world where the continuous pursuit of growth dominates our relations, degrowth transformations seeks to prioritise well-being over capital accumulation. However, capital stands as a significant obstacle to achieving these objectives, as noted by various degrowth scholars (e.g. Andreucci & McDonough, 2015; Feola, 2019a; Kallis et al., 2012; Koch & Buch-Hansen, 2020; Latouche, 2009a). While the meaning of the complex and evolving concept of capital is often implicit, this chapter delves into two prevailing definitions of capital which degrowth scholarship borrows from modern political economy. The first perspective treats capital as a means of production or a stock of productive assets, a view held by many contemporary economic schools of thought. The second perspective, rooted in Marx’s theories, regards capital as a process existing within the relations of production, a self-expanding value in motion. By examining these conceptions of capital, this chapter aims to review how each perspective has illuminated the challenges of realising degrowth in the face of capital accumulation, as presented in degrowth scholarship and related growth-critical literature.

This chapter also investigates a potential limitation within the existing perspectives on capital, as degrowth fundamentally questions the supremacy of economic thought and practices. The renowned degrowth thinker Serge Latouche,³² for instance, advocates for an exit from, or escape from, the economy (Latouche, 2009a, 2012; Latouche & Jappe, 2015). This idea is echoed by many degrowth thinkers, particularly those addressing the cultural aspects of the degrowth transition³³ (Fournier, 2008; Kallis, 2018; Leff, 2021; Parrique, 2019). It challenges the theoretical and practical implications of perceiving the world through a self-referential system of economic representations, which Mitchell (1998) describes as “a quasi-naturalistic, semi-autonomous reality, composed of laws, tendencies, or processes” (p. 84).

Theoretically, escaping the economy requires the socially constructed boundaries of the economic sphere to be dismantled. Instead, economic categories such as “capital”, “price”, “investment”, and “consumption” should be holistically recontextualised within society, emphasising their profound interconnections with wide-ranging processes, including those typically regarded as “political” or “natural”. This approach aims to foster a more comprehensive understanding of capitalism and facilitate the creation of a new social imaginary (Castoriadis, 1975/1998) that transcends growth. However, the dominant views on capital, frequently employed in degrowth literature, appear to conflict with this objective. Both conventional perspectives on capital presuppose, to varying degrees, an analytical separation of the economic sphere (Nitzan & Bichler, 2009). This limitation hinders our ability to comprehensively comprehend how capitalism operates and how degrowth transformations can unfold against capital accumulation.

This chapter is organised as follows. Sections 2.2 and 2.3 provide of capital when mainly viewed as a stock of productive goods, and the Marxian perspectives on capital, respectively, along with an examination of how they have shed light on the unfolding of degrowth against a capitalist framework. In Section 2.4, I revisit the anti-economicist foundations of degrowth and show how conventional perspectives on capital may contribute to anchor degrowth thinking within a dichotomy that separates the economic from the rest of society. Finally, in the conclusion (Section 2.5), I encourage degrowth

³² With his call to “decolonise our imaginaries” from growth and economism, Serge Latouche is classified by some as part of the “culturalist” (Kallis, 2018, p. 160) stream of degrowth or as an “anthropological critique of growth” (Durand et al., 2023, p. 6).

³³ See definition in Table 1, p. 7.

scholars to investigate alternative theories of capital that inherently bridge the economic-political divide from the outset.

2.2 Capital accumulation for the production of goods and services

In this section, I introduce one of two broad perspectives on capital accumulation used in the degrowth and growth-critical literature: the accumulation of capital mainly considered as a stock of productive goods. Then, I give an overview of how it has been used in degrowth, steady-state and post-growth (macro)economics and what it involves for the dynamics of degrowth transformations.

2.2.1 The accumulation of factors of production and money

The concept of “capital”, derived from the Latin term “caput”, meaning “head,” and its related term “capitalis”, which symbolically refers to a chief thing, has evolved significantly over centuries (Baladouni, 1984; Merriam-Webster, 2023). Initially, it meant cattle counts in ancient Greece and Rome, and later evolved to represent wealth in general (Hodgson, 2014). This shift marked the beginning of the term’s journey.

About eight centuries ago, “capital” began to adopt a more precise connotation as the principal assets of a trading enterprise. The term, known as “capitale” in 13th-century Italy, gradually signified a merchant’s financial capital (Braudel, 1957/1982). One of the pivotal advancements in the realm of finance was the introduction of double-entry bookkeeping in 13th-century Italy (according to Sombart in the early 20th century; Hodgson, 2016). This innovation allowed for a more comprehensive understanding of production and commerce through quantifiable monetary values. Furthermore, there are records from the 14th century indicating that Italian traders employed methods of capital discounting (de Roover, 1948/2013). Within this commercial and accounting backdrop, the financial interpretation of capital took root and became widely recognised (Hodgson, 2016).

In the 16th-century England, the term continued to convey its monetary meaning and was employed in business accounting. The 18th century marked a transformation in the concept of “capital”, especially under the influence of the economist Adam Smith. Smith reframed “capital” as the assets themselves, not just the money used to procure them (Cannan, 1921). He expanded the scope of capital to not just monetary resources but also tangible goods and labour power (Gun, n.d.; Hodgson, 2014; Trivedi & Bhattacharya, 2018). This nuanced change, although not clearly explained to readers, was

profoundly influential in economics. This led to the dual understanding of capital as both “money” and “productive goods”, with a frequent emphasis on the latter. The shift, though, often led to confusion between these two meanings (Hodgson, 2014; Trivedi & Bhattacharya, 2018). Still, it was not until the end of the 19th century that the central role of capital in production truly emerged. The Austrian economist Eugen von Böhm-Bawerk (1890/2007), delved deeply into the notion of capital. He defined it as a collection of produced assets intended for acquisition. Specifically, these assets arise from earlier production processes and are not meant for direct consumption. Instead, their purpose is to facilitate the procurement of additional goods. John Bates Clark (1888/1988), a pioneering neoclassical economist, delineated the notion of “capital goods” to emphasise the role of physical objects in production and to avoid its amalgamation with money. “Capital goods” became widely used to explain capital accumulation and still mostly refer to privately-owned goods used independently in production, such as machinery and buildings. These are often seen as durable, tangible assets with unique characteristics, serving as productive substances that can accumulate over time (Mankiw & Taylor, 2006/2021)

Whether these are physical goods or financial assets that are accumulated has, however, been and is still debated (Trivedi & Bhattacharya, 2018). Hodgson (2016) shows that Friedrich Hayek defended capital as a physical factor of production only. Trivedi and Bhattacharya (2018, p. 34) note that, in his literary works, Keynes presented diverse interpretations of capital. Within “The General Theory of Employment, Interest, and Money” (1936/2016), he oscillated between characterising capital as either “working” capital or “physical” capital.³⁴ Overall, Keynesians acknowledge a role played by financial capital, but their focus has remained primarily on the so-called “real” side of the economy.

Contrastingly, for Schumpeter (1954) capital is “essentially monetary, meaning either actual money, or claims to money, or some goods evaluated in money” (p. 322). Schumpeter considered crucial the provision of credit to entrepreneurs, fueling the process of creative destruction. Thorstein Veblen (1908a) rejected also the notion of

³⁴ Contrastingly, in “Treatise of Money” (1930/2011), his reference to capital was chiefly as working capital, which he viewed as the that essential resources that a business can use to finance its daily operations.

capital as a physical substance. Critiquing John Bates Clark, Veblen notably noted the disconnect between the common use of “capital” by economists and actual owners:

“in the business community, ‘capital’ is a pecuniary concept, of course, and is not definable in mechanical terms; but Mr. Clark, [...] sticks by the test of mechanical demarcation and draws the lines of his category on physical grounds; whereby it happens that any pecuniary conception of capital is out of the question.” (Veblen, 1908b, p. 162)

Veblen (1901) believed that the true nature of capital was grounded in the financial system, with an emphasis on its “relational, informational, and immaterial” (Hodgson, 2016, p. 181) essence. This financial value, for him, depends on the capitalisation of future earnings which rests not only on tangible assets (productive goods and the control that their property offer on the community) but also, importantly, on intangible assets (including community’s know-how, laws, conventions, social habits), while he did not view capital as a simple combination of these assets (see Section 3.2.2).

As Hodgson (2016, p. 183) indicates, the prominence of finance was frequently abandoned, as economists primarily focussed on the accumulation of physical goods. He gives the famous example of the Cambridge capital controversy of the 1960s and 1970s, debating the conceptualisation of capital, and which overlooked the issue raised by Schumpeter and others. In their models, economists from both Cambridge, UK, who were associated with the Post-Keynesian and neo-Ricardian schools, and Cambridge, US, often associated with neoclassical economics, conceptualised capital as tangible goods rather than as financial assets. Those from Cambridge, UK, also essentially sidelined the roles of money and finance, and stressed the diversity of capital goods and the challenge of aggregating them – such as aggregating assembly lines and computers (as reflected in the works of Sraffa, Harcourt, Robinson, Cohen, and Harcourt)³⁵.

While still not predominant, financial capital has, however, grown in popularity in recent decades (Trivedi & Bhattacharya, 2018, p. 42). While there is “essentially a twin concept of capital: capital as a monetary fund (not only money but also monetary claims) and capital as the produced means of production financed by the funds, that is the physical or production capital” (Trivedi & Bhattacharya, 2018, p. 42), in both cases,

³⁵ In macroeconomic analyses, the aggregation issue has been predominantly sidestepped by presuming the existence of a single, representative capital good within an economy (Berg et al., 2015; Kirman, 2011).

capital is seen as *servicing the process of production*. Neoclassical economists have usually assumed since Irving Fisher (1896, 1907) that financial values merely mirror the underlying capital goods, or “real capital”. Heterodox schools of economics, such as Post-Keynesian economics which has influenced post-growth economics (see Section 2.2.2), place greater emphasis on the role of financial dynamics in capital accumulation, but they still usually view it as a separate sphere that either facilitates or hinders production in the “real economy” (Keen, 2011; Minsky, 2008; Sotiropoulos & Hillig, 2020, p. 131). The development of stock-flow consistent (SFC) macroeconomics, largely situated within the Post-Keynesian economics, has also found application in growth-critical studies (see Section 2.2.2), integrating real and financial dimensions of the economy more comprehensively. SFC models provide a detailed representation of the interactions between “real” assets (like capital goods) and monetary flows, emphasising the importance of ensuring consistency between stocks (accumulated wealth or liabilities at a point in time) and flows (income and expenditure over a period of time) (Nikiforos & Zezza, 2018). In short, whether it concerns physical or financial capital, capital accumulation is usually focussed on producing goods or services for commodity exchange.

In addition to capital goods, most economists recognise other factors of production used in conjunction with capital, such as labour – predominantly – and land. The roles of these factors vary with schools of thought. Neoclassical economists assume that these factors are substitutable. In this context, economist Robert Solow (1974) stated, “[i]f it is very easy to substitute other factors for natural resources, then there is in principle no ‘problem’. The world can, in effect, get along without natural resources, so exhaustion is just an event, not a catastrophe” (p. 11). Gradually, the land factor – the sole representation of nature – has been omitted, with economic modellers typically utilising only capital and labour. As William Nordhaus and James Tobin (1973) explain, “[p]resumably the tacit justification has been that reproducible capital is a near-perfect substitute for land and other exhaustible resources” (p. 522). However, heterodox schools, such as the “socio-ecological economics” movement within ecological economics and post-Keynesian economics, have largely rejected this substitutability (Holt et al., 2009).

The relationship between factors of production and economic output is captured, essentially by mainstream economists, in a production function. One of the most widely

used functions, the Cobb-Douglas production function, associated with neoclassical economics, is typically formulated as:

$$Y = A K^{\alpha} L^{\beta},$$

where Y represents the monetary value of the total economic output, A is a parameter that defines the growth rate of technological progress – known as total factor productivity –, K is a uniform capital stock, L denotes the labour force, and α and β are constants that depend on available technology. For instance, Victor and Rosenbluth's (2007) LowGrow model employs a Cobb-Douglas function to simulate economic growth when evaluating the economic and environmental aspects of sustainable-prosperity scenarios.

At a macroeconomic level, this implies that to facilitate economic growth, the factors of production must either expand or be utilised more efficiently. This can be accomplished through means such as technological innovation or by enhancing the skills and knowledge of the workforce. Moreover, capital goods experience depreciation over time and must be replaced accordingly, as machinery and other assets can wear out, break, or become less efficient (Mankiw & Taylor, 2006/2021).

Capital accumulation refers to the continuous process of investing in capital. Figure 3 shows a basic view of the accumulation of “capital goods”. Market competition between firms is believed to drive this process, as it is generally assumed that firms must continuously improve economic efficiency to sell their products at competitive prices. Profits earned by firms, along with the saved part of incomes (funnelled into the financial system), allow new investments in capital goods. Firms that do not efficiently allocate their resources and fail to keep pace with competition in the marketplace tend to be eliminated, if they cannot rely on government intervention. This self-adjusting mechanism of market forces is sometimes referred to as “profit or die” (Lawn, 2011, p. 9).

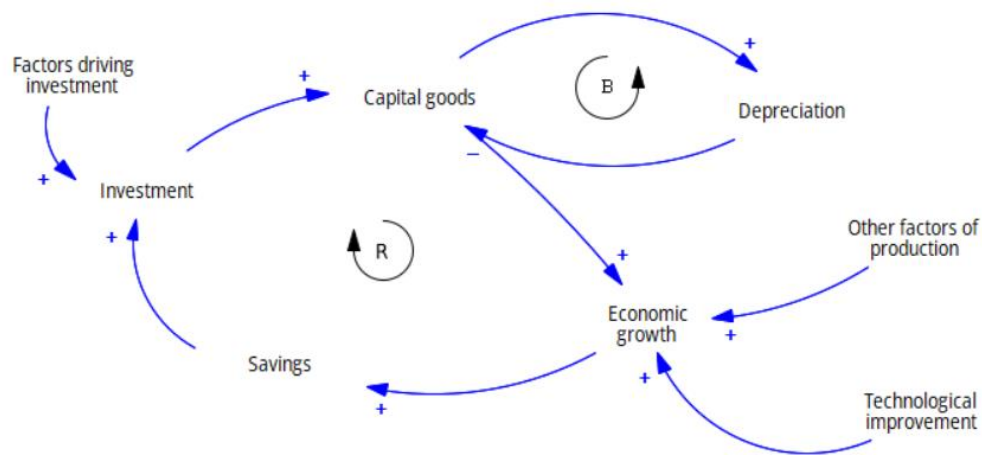


Figure 3. Simple overview of the accumulation of capital goods, based on mainstream economics

The factors driving firms' investment vary between schools of economic thought. Schumpeter emphasised the role of innovative and entrepreneurial investment as the driver of economic growth and structural change, leading to a dynamic view of capital accumulation. According to Schumpeter (1947), economic development results from entrepreneurs' "new combinations". These new combinations may involve the creation of new products, production methods, markets, supply sources, or organisational structures (Hanappi & Hanappi-Egger, 2004). This process of "creative destruction", as he termed it, results in innovation tidal waves that perpetually revolutionise the economic structure from within, destroying the old one and creating a new one (Schumpeter, 1942/2008).

The Keynesian revolution, prompted by the economic difficulties of the 1930s, brought a shift in perspective in economic thought. Keynes (1936/2016) introduced a greater emphasis on aggregate demand, fiscal policy, and macroeconomic factors as key determinants of economic performance, whereas neoclassical economics primarily emphasised supply-side factors, including the productivity of factors of production. This new perspective did not disregard the productivity of production factors, but it did emphasise the potential for demand-side factors to drive economic activity, especially in the short run. Post-Keynesians, building on the Keynesian revolution, have further nuanced our understanding of capital accumulation. They emphasise the role of expected demand and genuine uncertainty, distinguishing it from calculable risk, in influencing investment decisions. Such decisions, made under uncertainty, can lead to volatile capital accumulation dynamics. A positive demand outlook can spur businesses to invest, adopt

new technologies, and expand their workforce, driving economic growth. Furthermore, Post-Keynesians posit that the money supply is endogenously determined by loan demand, making the money creation process pivotal for investment and capital accumulation. They underscore the significant role institutions play in shaping these dynamics, pointing to the intricate socioeconomic facets of capital accumulation (Fontana & Sawyer, 2016; Holt et al., 2009; Lavoie, 2015).

On the whole, from these broad perspectives, while capital remains a disputed concept, capital accumulation can be defined as the economic process wherein investments are made in capital (whether it is a physical substance or a monetary value), and which drives economic growth. Capital accumulation entails a continued investment in so-called “productive” goods, such as machinery and buildings, and through the reinvestment of profits into these productive assets. Though the entity accumulated can include financial assets, capital has often been represented as tangible, durable assets that exhibit unique properties, contributing to the production process over time. Regardless of its form, capital is at the core of the productive process. Theories of capital accumulation range from seeing it as purely the result of innovative entrepreneurial activities to an unstable process influenced by expectations, investment decisions, and endogenous money creation. Irrespective of the theoretical lens, the primary role of capital accumulation in the is to enhance the production process (Hodgson, 2016; Trivedi & Bhattacharya, 2018). A range of degrowth, post-growth, and steady-state economy analyses of the capitalist drivers of growth and the potential impacts of degrowth-like paths on the economy build on this family of perspectives on capital accumulation. This will be further shown in the next section.

2.2.2 Implications for the unfolding of degrowth transformations

A variety of studies in ecological economics, encompassing degrowth, post-growth, and steady-state perspectives and aligning with this view on capital accumulation and mostly considering the accumulation of capital goods, have explored two main questions. Firstly, they examine whether capitalism inherently creates a growth imperative, and secondly, they analyse the potential impact of degrowth transformations on the economy.

If capitalism necessitates growth, a non-growing or shrinking capitalist economy may be unfeasible, which has implications for the types of transformations required to transition to a post-growth society. The debate surrounding the growth imperative in

capitalism has evolved in two related areas of ecological economics: steady-state economics (SSE for short; Daly, 1974), and ecological macroeconomics (Hardt & O'Neill, 2017; Saes et al., 2019). SSE scholars engage with early ecological economist Herman Daly's concept of a steady-state economy, which is "defined by constant stocks of physical wealth (artefacts) and a constant population, each maintained at some chosen, desirable level by a low rate of throughput" (Daly, 1974, p. 15). This definition rejects perpetual growth in a similar manner as degrowth. However, a crucial difference is that while Daly recognises capitalism's environmentally destructive consequences, he does not reject the system outright. Instead, he advocates for the implementation of institutions alongside the market economy, such as minimum and maximum incomes, population stabilisation, and depletion quota markets, to stabilise the stocks of physical resources (Daly, 1974). This aligns with SSE's theoretical foundations derived from neoclassical economics (see Pirgmaier, 2017). As a result, it is unsurprising that these researchers have primarily adopted the perspective of capital as productive goods when examining whether a capitalist economy can sustain negative growth or if a non-growing economy could be capitalist (Lawn, 2011; Lianos, 2021; Trainer, 2016).

From this angle, Lawn (2011) maintains that capital accumulation does not automatically result in overall economic growth. He suggests that if the institutions recommended by steady-state economists were enacted, some businesses would fail, while others with greater efficiency or higher-quality goods would survive, earning "healthy profits" (Lawn, 2011, p. 18). Lawn acknowledges that employment distribution across industries might change, and costs could rise, but increased productivity would offset these economic drawbacks. He posits that institutional forms sustaining and shaping capitalism determine its nature, making a steady-state capitalist economy theoretically plausible.

Lianos (2021) delves deeper into Lawn's argument, using a standard Cobb-Douglas production function (see Section 2.2.1) and arithmetic reflections to reach a similar conclusion: steady-state capitalism is feasible. Lianos further asserts that a steady-state economy could exist under socialism and, contrary to Lawn, may be preferable under certain conditions. Both scholars concur that capital accumulation is not inherently incompatible with steady or declining GDP, but external interventions are necessary to create a desirable economy.

Trainer (2016) however, expresses scepticism about this view. He contends that productivity gains heavily rely on energy consumption, which he deems a critical factor of production that should be considered alongside capital and labour. Trainer argues that in an energy-constrained situation, the profits generated by capital investment would be insufficient for the normal continuation of capital accumulation.

Another branch of ecological economics, *ecological macroeconomics*, mainly builds on Post-Keynesian and SFC macroeconomic models (see Section 2.2.1) to investigate the possibilities of a post-growth, sustainable economy while preserving macroeconomic stability (Althouse, 2022; Hardt & O'Neill, 2017). The seminal books by Peter Victor (2008), *Managing Without Growth: Slower by Design, Not Disaster*, and Tim Jackson (2009), *Prosperity Without Growth: Economics for a Finite Planet*, have paved the way for the development of ecological macroeconomics (Hofferberth, 2021). Several studies in ecological macroeconomics have, like SSE, investigated capitalism's growth drive. For instance, Cahen-Fourot (2022), Cahen-Fourot and Lavoie (2016), and Jackson & Victor (2015) concentrate on the role of debt money in the growth imperative (see also the stability analysis of these models by Richters and Siemoneit (2017)). They tend to reject the hypothesis that the capitalist debt money system produces a systemic growth imperative, disagreeing with Arnsperger et al. (2021). In another study, Jackson and Victor (2016) examine the hypothesis proposed by Thomas Piketty (2013) suggesting that economic inequality increases when the rate of economic growth falls below the rate of return on capital – which would involve a “political” growth imperative (Althouse, 2022). They find that this holds when capital goods can be easily substituted for labour – the two factors of production typically included in their models. However, if this substitution is difficult, a low-growth (capitalist) economy can be achieved without exacerbating inequality. This suggests that a post-growth/degrowth transition might be feasible by investing in activities where human labour is significant and not easily replaceable by capital goods.

Jackson and Victor have also developed several macroeconomic models (Jackson, 2019; Jackson et al., 2016; Jackson & Victor, 2020, 2021; Victor, 2012; Victor & Rosenbluth, 2007) to investigate a variety of contrasting scenarios for both growing and non-growing economies. These models incorporate macroeconomic and environmental variables, such as GDP and greenhouse gas emissions. In their models, Jackson and

Victor include capital as a stock of productive goods. The accumulation of capital propels production and productivity, and it has an impact on employment levels.

Following in their footsteps, an expanding community of post-growth economists have developed macroeconomic models to explore the economic implications of post-growth scenarios and policy proposals. Whereas they are not used to explicitly focussing on capital accumulation, they generally include the accumulation of capital goods as a driver of growth (D'Alessandro et al., 2020; Hardt et al., 2020; Kemp-Benedict & Ghosh, 2018; Lange, 2018; Oberholzer, 2023).³⁶ For example, using models from multiple theoretical perspectives, Lange (2018) concludes that the main condition for stable negative growth is a reduction in the supply of production factors, such as natural resources and labour, combined with a reduction in working time. Several models include greener and conventional capital goods, representing different types of investment (D'Alessandro et al., 2020; Hardt et al., 2020; Jackson & Victor, 2020). These studies do not directly engage with the concept of *degrowth*, but since *post-growth* is a similar notion (see Section 1.2.1), they nevertheless shed light on the unfolding of degrowth transformations.

Some studies use the term “degrowth”, while it usually refers to purely quantitative dimensions of degrowth transformations, rather than systemic shifts. Bilanci and D'Alessandro (2012) and Heikkinen (2020) take a neoclassical perspective to study “degrowth” paths’ macroeconomic effects. The former pair explore several scenarios, including a degrowth path in which the stock of capital goods and material consumption declines. They suggest that the loss of well-being due to decreased consumption could be compensated for by more leisure time if well-being’s dependency on consumption is not too high. Heikkinen (2020) draws on the *von Neumann equilibrium model*, a neoclassical model, assuming the possibility of a non-growing, stationary state in which economic forces are balanced. Her results indicate that under such conditions, investing in capital goods would become unprofitable on average. Because such a situation is at odds with conventional economic thinking, the author recommends “the introduction of different forms of centralized control” (Heikkinen, 2020, p. 9), which are beyond the scope of this analysis.

³⁶ I cite only published studies that explicitly assess post-growth scenarios and policies, while the field of ecological macroeconomics is broader (see Althouse (2022)).

Monserand (2019) explores the theoretical possibilities of a degrowth transition that maintains macroeconomic stability by integrating Post-Keynesian and ecological economics perspectives. It examines whether an equilibrium with zero or negative accumulation can coexist with Keynesian stability, and reveals three key findings: the importance of investors’ attitude as a potential policy variable for managing degrowth, the role of overhead labour, capital tax, autonomous consumption, and budget deficits in providing “space” for negative accumulation equilibrium, and the potential for combined political action and adoption of ecological lifestyles as drivers of a stable degrowth transition. Ultimately, stabilisation of aggregate consumption in a stationary state enables an ecologically sustainable economy. In another paper, Monserand (2022) shows, with a Post-Keynesian macroeconomic model, that slowing down obsolescence – modelled as a lower rate in the depreciation of capital goods – would reduce income inequality between wage earners and capitalists while reducing pressures on the environment. This lower obsolescence of capital goods is set exogenously, it does not cover the pathways through which this decreased obsolescence could be achieved.

In a study modelling a Keynesian “environmental coordination game”, Althouse et al. (2020) investigate scenarios of unequal exchange between parts of the globe, divided between “a technologically advanced industrial ‘centre’ and a lagging ‘periphery’” (Althouse et al., 2020, p. 2). It includes a “degrowth” scenario in which the centre experiences negative economic growth while the periphery grows positively – only the quantitative dimension of degrowth is considered. It points out that “the only way to have degrowth in the centre and a positive growth rate in the periphery is to assume [...] that the centre will face the double burden of transferring capital to the periphery while their own income is falling” (Althouse et al., 2020, p. 12). As they recognise, this is far from obvious from a political standpoint, though.

Table 2. Overview of degrowth transformations in studies explicitly examining “degrowth”, “post-growth” or “steady-state economy” pathways, and which view the economy as primarily based on the accumulation of capital goods

Category	Degrowth transformations	Examples of references
Labour and employment reforms	Change in substitutability between capital and labour	Jackson (2019); Jackson and Victor (2016)
	Implementing a basic income	Heikkinen (2020)

	Implementing a job guarantee	Victor and Rosenbluth (2007)
	Increasing minimum hourly wage	D'Alessandro et al. (2020)
	Reducing labour productivity	Hardt et al. (2020)
	Reducing working hours	D'Alessandro et al. (2020); Heikkinen (2020); Jackson and Victor (2020); Lange (2018); Oberholzer (2023); Victor (2012)
Changes in economic structure	Negative economic growth	Jackson and Victor (2020); Lawn (2011); Lianos (2021); Trainer (2016); Victor (2012); Althouse et al. (2020)
	Reducing exports or international trade	D'Alessandro et al. (2020); Heikkinen (2020)
	Reducing investment in capital goods	Bilancini and D'Alessandro (2012); Jackson and Victor (2020); Kemp-Benedict and Ghosh (2018); Lange (2018); Monserand (2019)
	Reducing growth in government expenditure	Victor (2012)
Changes in consumption and production patterns	Changing in the energy mix	D'Alessandro et al. (2020)
	Green investment; Cheapening "green" capital goods	D'Alessandro et al. (2020); Jackson and Victor (2020); Heikkinen (2020)
	Diminishing consumption	Bilancini and D'Alessandro (2012); D'Alessandro et al. (2020); Heikkinen (2020)
	Lowering capital stock depreciation (obsolescence)	Monserand (2022)
	Shifting to low energy intensity sectors	Hardt et al. (2020)

	Imposing carbon and/or ecological taxes	D'Alessandro et al. (2020); Heikkinen (2020); Victor (2012)
Financial and credit system reforms	Exposing the role of credit/debt in growth	Arnsperger et al., (2021); Cahen-Fourot (2022); Cahen-Fourot and Lavoie 2016; Jackson & Victor (2015); Richters & Siemoneit (2017)
Wealth and income redistribution	Taxing wealth	D'Alessandro et al. (2020); Victor (2012)
	Redistributing income or supporting low income groups	Jackson and Victor (2020); Victor (2012); Victor and Rosenbluth (2007)
Societal shifts	Cessation of population growth	Victor (2012)

Table 2 categorises some of the key degrowth transformations considered in these studies into six broad themes: Labour and employment reforms, economic structure changes, changes in consumption and production patterns, financial and credit system reforms, wealth and income redistribution, and societal shifts, each with corresponding transformations and their respective scholarly references. These dimensions systematically assume *top-down* interventions in the economy and overlook the potential role of bottom-up actions, such as grassroots alternatives and resistances (see, e.g. Barlow et al., 2022; Demaria et al., 2013; Schmelzer et al., 2022; Treu et al., 2020; see Chapter 4), which cannot be easily – and meaningfully – reduced to economic factors and variables.

Furthermore, the accumulation of capital is considered an engine of growth and hence an obstacle to quantitative dimensions of degrowth. However, this obstacle is not usually seen as necessarily insurmountable. The side effects of negative capital accumulation could be circumvented by appropriate government interventions and/or the acceptance of capitalists to stop accumulating profits. Little light has been shed on how these conditions could be met, though.

In summary, the transformations studied involve adjustments – even if they may be considered significant – to the economic system than the fundamental re-organisation

of production, consumption and power distribution advocated by degrowth tenants (see Section 1.2.1).³⁷

2.3 The Marxian perspective: Capital accumulation as the reproduction of capitalist social relations

In this section, I introduce the second main perspective on capital of contemporary political economy used in degrowth capital: Marx's concept of capital. In Marx's view, capital is a social relation of production. It is, at the same time, the money or physical objects used in the production process and a social relation of exploitation of labour power by the capitalist class. I offer a brief overview of the dynamic of capital from this perspective. Then, I identify how this concept has mainly shed light on degrowth's dynamics of transformation.

2.3.1 Capital accumulation and the economic laws of motion

Parallel to the conception of capital as a stock of productive goods, the 19th-century political economist, philosopher and revolutionary activist Karl Marx (2010) developed an alternative understanding of this concept and its dynamics of accumulation which drives the *capitalist mode of production*. Karl Marx wrote the three-volume book *Capital* in order to “reveal the economic law of motion of modern society” (Marx, 1867/2010, p. 97). Karl Marx conceived capital differently from his predecessors, emphasising the social relations of production and class conflicts underlying capitalist production. He defined capital as “not a simple relation, but a process, in whose various moments it is always capital” (Marx, 1939/1993, p. 258).

Marx's concept of capital begins with his theory of value. He postulated that every commodity's value results from human labour: “As values, all commodities are merely definite quantities of congealed labour time” (Marx, 1867/2010, p. 130). In this sense, the more (direct and indirect) time required for a commodity's production, the higher its value.³⁸

³⁷ Except, arguably, for the credit system, although it is more the functioning of the current system than alternatives that have been explored in the studies cited.

³⁸ Use value and exchange value are two critical concepts related to value in Marx's theory. Until it is exchanged, a commodity only has use value, meaning that it is useful and has the capacity to satisfy wants, e.g. a bicycle has use value because it is useful to move throughout a city; the same holds for a carrot because it is tasty and eating carrots in moderation is good for one's health. Use values are qualitative and not comparable – a bicycle's use value cannot be compared to a carrot's. When exchanged on a market, a commodity acquires an exchange value, quantitatively comparable to other commodities. Exchange value is

Capital, from the Marxian perspective, is an entity arising from the accumulation of money used to purchase and produce commodities, intending to resell them and extract surplus value. This surplus value represents the difference between the value created by employees' labour and their pay. Capital is therefore a productive entity, but not any productive entity, one that is controlled by a particular class to exploit the working class: “Capital is not the sum of the material and produced means of production. Capital [...] is the means of production monopolised by a particular section of society, the products and conditions of activity of labour-power” (Marx, 1894/1993, p. 953).

Marx describes the process of capital accumulation as a never-ending cycle, transforming money (M) into commodities (C) and back into more money (M'): M - C - M'. He further refines this cycle in *Capital*, Volume II, as M - C(-MP)(-LP)... P... C' - M'. This cycle involves the purchase of commodity inputs (C), consisting of means of production (MP) and labour power (LP), which together form productive capital (P). The production process takes place, and outputs with a greater value than inputs are created. This value is converted into monetary terms when the commodity outputs are sold on the market, resulting in the realisation of surplus value. The difference between the values of sold outputs and purchased inputs is the surplus value or profit that capitalists accumulate. This process is cyclical and expand infinitely (as illustrated in Figure 4), with augmented capital (M') providing capitalists with more resources to exploit workers and realise more surplus value. In essence, Marx views capital as “dead labour” that only lives by exploiting the living labour of workers (Marx, 1867/2010). In this sense, capital is a “value that aspires to valorise itself, the core economic engine of capitalism” (Andreucci & McDonough, 2015, p. 60).

therefore not related to the commodity's usefulness but arises from the labour time needed to produce it and, more precisely, *socially necessary abstract labour time* (SNALT). Because not all workers work in similar conditions, labour time is considered *socially necessary* to reflect the average time needed to produce a commodity for an average worker – i.e. a worker of average skill working with equipment offering average productivity. In principle, one can then compare a bicycle and a carrot's exchange value. However, nobody can directly observe the SNALT embodied in a bike or a carrot, it is not an empirically observable unit. To overcome this issue, Marxians assume that the prices of production – defined as the average costs of supplying commodities plus the average profit – are proportional to exchange values (in SNALT). Then long-run market prices are believed to oscillate around prices of production. If a bike costs on average 10,000 times more than a carrot, 10,000 times more SNALT is also on average necessary for its production.

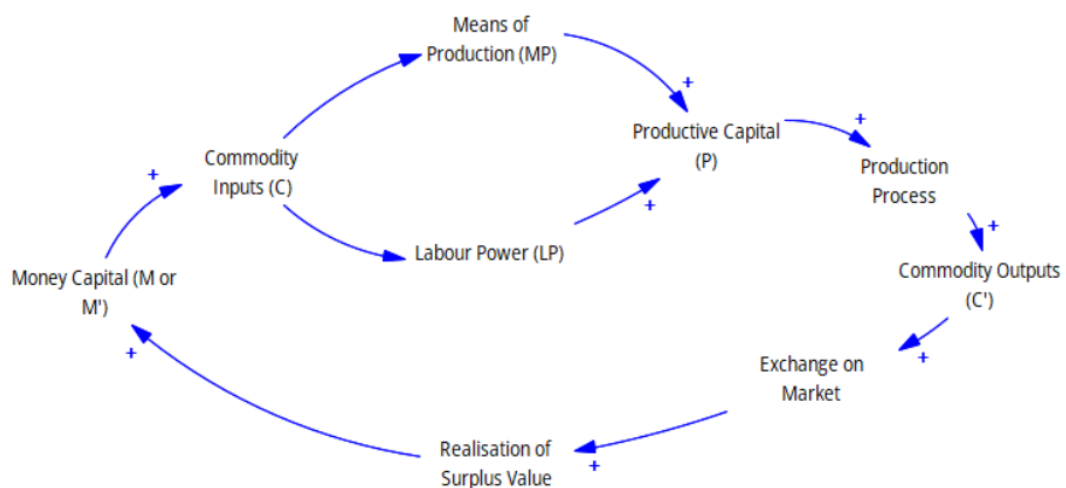


Figure 4. A simple overview of the cyclical accumulation of capital from a Marxian perspective

To illustrate this process, let us consider a simple example, in which a capitalist purchases raw materials and machinery (means of production) and hires workers (labour power) to produce bicycles. The value of the bicycles produced includes the value transferred from the raw materials and machinery and the value created by the workers' labour. The capitalist pays the workers a wage, but the value they produce exceeds their wages. This difference is the surplus value or profit that the capitalist accumulates.

Because it relies on ongoing expansion of production to create profit, capital accumulation is inextricably linked to the exploitation of natural resources and environmental repercussions. Capitalists attempt to maximise profits by exploiting and utilising natural resources at the lowest possible cost, frequently putting short-term advantages ahead of long-term sustainability. It tends to lead to resource overconsumption and depletion, as well as pollution and environmental degradation (Foster, 1999; Pirgmaier, 2018).

Marx placed a strong emphasis on categories related to production in his theory of capital accumulation. Capital accumulation is indeed considered primarily driven by the production process, rather than by financial activities such as trading assets, lending, and borrowing. Financial assets such as bonds, stocks and shares are described as *fictitious* capital – which emphasises its lower importance, compared to *real* capital (or just “capital”). Fictitious capital is, by definition, forward-looking: it represents expectations

over future profits – an illusion that might vanish if the surplus value is not realised. In contrast, the abstract labour units underlying the value of commodities and accumulated capital are inherently backward-looking; they result from past and present productive time (Nitzan & Bichler, 2009, p. 259). *Real* and *fictitious* capital are therefore quantified through different processes and move following distinct dynamics. However, as Marx recognised, both types circulate as capital: fictitious capital is “money that is thrown into circulation as capital without any material basis in commodities or productive activity” (Harvey, 2018, p. 95). In times of expansion and positive expectations about future earnings, some capitalists can take advantage of inflated fictitious capital to convert it into money and buy additional physical means of production. In contrast, it may generate crises when capitalists’ expectations regarding future surplus value are not satisfied (Hudson, 2010). Overall, all this fictitious capital without underlying labour substance is supposed to have no long-term influence on value and prices:

“Marx’s followers solved this problem by assuming that, over the long run, the labour theory of value prevails (with prices proportionate to labour values) and therefore that, at some point, there must be a ‘financial’ crisis to bring the price of fictitious capital back in line with the labour values of real capital: In order for the price system to work, financial forces should cause fictitious capitals to move in directions that parallel changes in reproduction values. [...] By losing any relationship to the underlying system of values, strains eventually build up in the sphere of production until a crisis is required to bring the system back into a balance, whereby prices reflect the real cost of production. The fiction of fictitious value cannot be maintained indefinitely. At some unknown time in the future, prices will have to return to a rough conformity with values”. (Perelman, 1990, p. 83)

Therefore, the accumulation of *real capital* – means of production – and *money* is the cornerstone of accumulation and the primary dynamic whereas the movements of fictitious capital support or distort it.

At first glance, this distinction may seem trivial, but Marx’s concept of capital is central to understanding capitalism and its (according to Marx) inherent contradictions. He developed a series of economic laws of motion of modern society that describe tendencies of the capitalist mode of production. These laws reveal how capital accumulation shapes the economy and society, with key tendencies including the capitalist's compulsion to accumulate, the constant drive for technological innovations,

and the unquenchable thirst for surplus-value extraction, as well as the centralisation and concentration of capital.

These tendencies give rise to several important developments, such as the increasing organic composition of capital (in short, more machines and less labour), the tendency for the rate of profit to decline, the inevitability of class struggle, social polarisation, growing objective socialisation of labour, and the eventual occurrence of economic crises under capitalism. These interconnected laws of motion ultimately generate inherent contradictions within the capitalist system and the potential for revolutionary change³⁹ (Mandel, 1990, pp. 25–30).

Marx (1859/2008) saw that capitalism's very nature, with its drive for accumulation, class struggle, and economic crises, would eventually create the conditions for its own downfall:

“At a certain stage of development, the material productive forces of society come into conflict with the existing relations of production ... From forms of development of the productive forces these relations turn into their fetters. Then begins an era of social revolution. The changes in the economic foundation lead sooner or later to the transformation of the whole immense superstructure.” (p. 4)

Marx viewed, indeed, the development of capitalism as a historical process, with each stage carrying the seeds of its eventual transformation. Marx's theory of historical change, often referred to as historical materialism, contends that social change is driven by the development of productive forces (technology, labour power) and the subsequent transformations in the relations of production (ownership, control, distribution). In this view, changes in the economic base will eventually trigger transformations in the societal superstructure, including political institutions, law, and culture. The resulting class struggles act as the engine for this transformative process. The growing social polarisation, objective socialisation of labour, and increasing frequency and severity of

³⁹ Degrowth's precursor Cornelius Castoriadis (1975/1998) criticised this aspect of Marxism for its determinism: “Is the essential factor in the evolution of capitalism the technological revolution and the effects of the economic laws that govern the system? Or is it the struggle of classes and social groups? In reading Capital we see that the first response is correct. Once its sociological conditions are established, once what can be called the 'axioms of the system' are posited in historical reality (that is, the degree and specific type of technical development, the existence of accumulated capital, and of a sufficient number of proletarians, etc.) and under the continuous impetus of an autonomous technical progress, capitalism evolves solely in terms of the effects of the economic laws it contains, and which Marx has formulated.” (p. 30).

economic crises would lead to greater awareness and organisation among the working class. This, in turn, would create the conditions for the working class to challenge the capitalist system, ultimately overthrowing it and replacing it with a socialist society.

In a socialist society, the means of production would be owned collectively, rather than being controlled by a small group of capitalists. This would result in a more equitable distribution of resources and power, eliminating the exploitation inherent in the capitalist system. While Marx's predictions have been criticised⁴⁰, his analysis of the contradictions and dynamics within capitalism remains highly influential in understanding the potential for the transformations of capitalism.

2.3.2 Implications for the unfolding of degrowth transformations

Degrowth research has sometimes had a discomfoting relationship with Marxian theory. In particular, a tension stems from differing views on the possibility of sustainable growth under socialism (Akbulut, 2021). Indeed, despite Marx's concern about the shifting human-nature relationship (Foster, 2000), many degrowth proponents associate a large part of this scholarship to productivism. Or in other words, Marx's followers were blinded by the mirages of green growth (Kallis, 2015b; Latouche, 2009c). For example, the Marxian scholar Vergara-Camus (2019) dismisses degrowth in favour of a post-capitalist society that relies on more efficient and sustainable technologies. Similarly, Schwartzman (2020) supports the idea of the *Solarcommunicene*, a productivist and communist society based on solar energy and recycling. Other Marxian scholars have presented frontal critiques of degrowth, for not sufficiently questioning the capitalist structures underlying growth. A key – and in my view, warranted – critique is that the degrowth movement tends to oversimplify the complex dynamics of capitalism. There is also a suggestion that the degrowth movement lacks a concrete strategy to bring about the necessary changes in the economy. In their view, by overlooking the process of accumulation, degrowth theory is therefore incapable of proposing relevant answers to the problem it criticises (e.g. Correia, 2012; Foster, 2011; Harribey, 2009, 2022).

⁴⁰ Marx believed that industrial advancements like steam-powered factories and railways would prompt the industrial working class to rise and challenge capitalism, eventually establishing communism. However, contrary to expectations, the global revolution began in 1917 Tsarist Russia, where there was not a significant industrial workforce. Instead of leading to communism or socialism, many, including Karl Popper, argue that the Bolshevik revolution ushered in a new era of barbarism (Urry, 2016, p. 4).

However, these concerns have not prevented degrowth and Marxian perspectives meeting to investigate the relationship between growth and capital. Critics of capitalism among ecological economists and degrowth researchers have used the Marxian concept of capital in this regard (e.g. Andreucci & McDonough, 2015; Blauwhof, 2012; Hofferberth, 2021; Koch, 2012, 2019; Pineault, 2020; Richters & Siemoneit, 2019; Schmelzer et al., 2022). Several other Marxian scholars have done the same (e.g. Harvey, 2011; Li, 2007; Magdoff & Foster, 2010; Smith, 2010). For them, growth is a built-in feature of the capitalist mode of production. Pineault (2020) contends that “[i]f a capitalist economy can be defined by the drive towards accumulation, then growth is the materialization of this process and capitalism appears as growth” (p. 31).

According to Magdoff and Foster (2010), zero growth is possible if all revenues are used for consumption. However, this is theoretically impossible under the capitalist mode of production because firms must reinvest their earnings to stay competitive: “There is no alternative under capitalism to the endless expansion of the ‘real economy’ (i.e. production), irrespective of actual human needs, consumption, or the environment” (Magdoff & Foster, 2010). Blauwhof (2012) reviews the case for a steady-state, zero growth economy, and concludes that it is theoretically possible but not feasible within the social relations of capitalism, and can only be successful if complemented by a wider attempt to transcend the capitalist relations of production.

Overall, the key issue is that capital accumulation creates a systemic imperative to increase productivity, which leads to increasing levels of production (see Section 2.2.1). This led Latouche to assert, in this vein, that “[g]rowth is only the ‘vulgar’ name for what Marx analysed as the unlimited accumulation of capital, the source of all the impasses and injustices of capitalism” (2009b, p. 38, mt). This productivity increase creates a barrier to “more sustainable forms of production, which are typically more time-intensive and hence costly” (Pirgmaier, 2018, p. 12), making the wide-scale development of non-capitalist forms of business unlikely within a capitalist system.

Therefore, from a Marxian standpoint, there is little debate: capital accumulation is the root of growth, degrowth is thus incompatible with capital accumulation and hence capitalism. Growth is considered to foster stability in capitalism, reducing class conflicts. An absence of growth thus means an absence of accumulation, which necessarily intensifies instability, economic inequalities and social tensions (Blauwhof, 2012). In a more nuanced way, for Kallis, “there is no [growth] imperative in the abstract, but only in

the concrete sense that capitalism becomes politically and socially unstable if it fails to produce growth and good conditions of accumulation” (Kallis, 2015c, sec. Capitalism’s ‘growth imperative’).

The corollary of the Marxian view on capital is that degrowth can be achieved only if the the productive forces, i.e. the broad factors contributing to the productive activity of human beings, are transformed and the capitalist relations of production driving accumulation are transcended. For the ecological Marxist John Bellamy Foster (2015), “a system of meeting collective needs based on the principle of enough is obviously impossible in any meaningful sense under the regime of capital accumulation” (sec. The Great Convergence). There is indeed little evidence in the history of capitalism that would confirm the compatibility between capitalism and sustained negative growth (Koch & Buch-Hansen, 2020). As Foster (2011) argues, “[t]he ecological struggle, understood in these terms, must not merely aim for degrowth in the abstract but more concretely for *deaccumulation* – a transition away from a system geared to the accumulation of capital without end” (p.33). Marxians often assume that the accumulation of capital must be halted – or in some sense, collectively owned – with the social appropriation of the main means of production, the end of labour exploitation, and a form of democratic planning (Durand-Folco, 2015; Löwy et al., 2022).⁴¹

Examining the concept of degrowth from a Marxian perspective raises an important question: How can degrowth unfold amidst capital accumulation? Traditional Marxian discourse suggests that socialism, as a natural evolution of capitalism, will arise from its inherent contradictions and economic laws of motion. Marx’s theory of historical materialism posits that social change arises from the material conditions of society, primarily through conflicts between different social classes. The contradictions fuel class conflicts, which Marx believed would lead to a proletariat-led revolution. This revolution, in turn, would serve as the primary mechanism for transitioning into a post-capitalist

⁴¹ One recent exception comes from Saito (2023). Saito emphasises the evolution of Marx’s views on capitalism and its ecological consequences, highlighting a shift from initially seeing capitalist productivity as wholly beneficial to recognising its environmental harms. For him, Marx, moving away from eurocentrism, began to view pre-capitalist and peasant communities as models of sustainable interactions with nature. Saito suggests that Marx believed these societies could adopt modern technologies and transition directly to an environmentally-friendly communist model, bypassing the destructive capitalist phase.

society. Such a society would collectively own the means of production, thereby eradicating exploitation and class antagonism.⁴²

Foster (2015) proposes a broad, two-stage theory of change. The first stage, the “ecodemocratic phase”, requires current, practical steps that challenge capitalist logic. These include a radical movement pushing for feasible short term measures that “run against the prevailing logic of capital accumulation” (p. 5) go like

“a carbon-fee-and-dividend system, with 100 percent of the revenue being redistributed back to the population on a per capita basis; a ban on coal fired plants and unconventional fossil fuels (such as tar sands oil); a vast shift to solar and wind power and other sustainable energy alternatives, such as energy efficiency, financed by cutbacks in military spending; a moratorium on economic growth in the rich economies in order to reduce carbon emissions, coupled with radical redistribution (and measures to protect the less well-off); and a new international climate negotiation process modeled on the egalitarian and ecocentric principles of the Peoples’ Agreement of the World Peoples’ Conference on Climate Change in Bolivia in 2010” (pp. 9-10).⁴³

The second stage, the “ecosocialist phase”, targets a long-term systemic transformation. This change, emerging from environmental pressures of our time, necessitates a revolution for more egalitarian global governance, incorporating ecological, social, and economic planning. The compounding effects of ecological degradation and economic hardship may give rise to an “environmental proletariat” leading a revolt against the current system. Other societal groups are also expected to join the struggle as conditions worsen. Foster envisions socialists guiding this transition towards equitable and sustainable human development, even as the concept of socialism evolves. The theory of change proposed by John Bellamy Foster is a two-stage strategy based on Marxist ecological thought and aimed at both social and ecological revolution.

If we use this two-stage approach as a framework, one may consider that degrowth scholars engaging with the process of capital accumulation from Marxian perspectives, have, for their part, mostly focussed on the first, “ecodemocratic” phase. Chertkovskaya

⁴² However, the prospect of an almost automatic transition to socialism remains a contested idea among Marxian scholars, with many, like Wright (2010), expressing scepticism.

⁴³ It is not clear to me, though, whether and how Foster’s propositions would inherently run against the logic of capital accumulation and how “a moratorium on economic growth” could be promulgated.

and Paulsson (2021) argue for the transformation of the productive forces, i.e. all the factors contributing to human beings' productive activity, such as labour power, instruments of productions, modes of organisation, and material resources - notably by reducing working hours and using "convivial tools" (Illich, 1973/2021). It would pave the way for countering corporate violence, i.e. "organised violence associated with the pursuit of profit and growth" (Chertkovskaya & Paulsson, 2021, p. 5). Hofferberth (2021), on her side, examines the implications of a range of standard degrowth/post-growth policies and their implications for the economy, equity and the environment within a primarily Marxian framework. This research comprehensively uncovers both systemic catalysts for transformation and systemic impediments to the execution of particular policy proposals. Yet, these are potential shifts in the *economic* system, without an examination of the state's role, or cultural changes in how these transformations can unfold, indicating a gap in our understanding of how such a transformation could be effectively executed.⁴⁴

As a crucial step, paths of transformation have been proposed by degrowth studies, like Schmelzer et al. (2022) and Barlow et al. (2022), building on the typology of modes of transformation from the Marxian sociologist Erik Olin Wright – interstitial, symbiotical and ruptural (see Chapter 4). However, it remains strikingly unclear how these dynamics may unfold, or not, *against the process of capital accumulation*. For example, how could small-scale initiatives expand and build a new society in the face of capitalist competitors compelled to productivity growth, whereas a Marxian analysis like Sharzer (2012) deems that is unrealistic?

Overall, the ongoing debate between Marxism and degrowth reveals the difficulty of envisioning the emergence of a post-growth society from within capitalism, which may benefit from more holistic ways of thinking, as discussed in the next section.

2.4 The economic fly bottle

Before delving into the anti-economicist foundations of degrowth and its implications for change, let us first consider the fly bottle metaphor described by Watzlawick (1988) and explained by Pires (1995):

⁴⁴ Further work in Durand et al. (2023) elaborates on how planning in a degrowth society could be designed. However they leave open the question of the *dynamics of transformation* to these new modes of governance.

"[These bottles] had a wide, funnel-shaped opening, giving an appearance of security to the flies that ventured into the ever-narrower neck of the container. Once in the belly of the bottle, the only way for the fly to get out of it was to take the same narrow conduit she had come in. But, seen from the inside, it looked even narrower and more dangerous than the space she was trapped in. So it looked for the exit where there was not, in this case, in the apparently more open and reassuring space of the bottom of the bottle, and it ended up dying in the bottle even though the outlet was not blocked. According to Wittgenstein, it would have been necessary, in such a situation, to convince the fly that the only solution to its dilemma was in fact the one which seemed the least appropriate, and the most dangerous: it was necessary to take the opposite path, to venture into the bottle neck, to regain his freedom." (p. 134, mt)

In the pursuit of a post-growth society, some degrowth scholars, Serge Latouche in the lead, advocate for “decolonising our imaginary” and “exiting” or “escaping the economy” (Feola, 2019b; Fournier, 2008; Kallis, 2018; Latouche, 2009a, 2014b; Leff, 2021; Parrique, 2019; Varvarousis, 2019), to “shift and re-politicise the terms in which economic relations and identities are considered” (Fournier, 2008, p. 528). In other words, we need to find the exit of the economic fly bottle. With minds colonised by self-referential economic representations, we are unable to comprehend the interconnectedness of the world, and let alone, transform it along the lines of degrowth principles. Escaping the economy thus involves moving beyond framing key problems as economic in nature or viewing them from an economic perspective (Latouche, 2016).

By connecting this aspect of degrowth’s critique of economism with Nitzan and Bichler's (2009) critique of conventional capital concepts, I argue in this section that the theories of capital used in degrowth contribute to a conceptual fly bottle. This confines the comprehension of certain aspects of the relationship between degrowth and capitalism within the limitations of economic thought and restricts our understanding of how degrowth transformations can unfold.

Indeed, although the conventional perspective of capital as productive goods and the Marxian concept of capital both provide a comprehensive theoretical basis for analysing capitalism, they presuppose that capital accumulation follows economic dynamics while treating, in different ways and to different degrees, wide-ranging political, cultural, environmental aspects as external factors. Such limitations hinder a holistic examination of wide-ranging degrowth transformations against capital accumulation.

In the remainder of this section, I attempt to clarify the need to move beyond the self-referentiality of the economic sphere. Then I explore how capital accumulation is analysed as an economic process, emphasising the bifurcations between *the economic* and *the political* within the “capital goods” and Marxian concepts of capital. For each, I discuss how it limits the understanding of the unfolding of degrowth.

2.4.1 From the invention of the economy...

Currently ubiquitous, the economy as an object nonetheless has a relatively short history. Indeed, pre-capitalist societies did not need to distinguish an economic sphere to think about their material activities. Rather, these activities were inherently intertwined with political, military, familial, religious, natural, and other aspects of life (Latouche, 2005b; Polanyi, 1944/2001; Ulrich, 2008). For instance, Karl Polanyi (1944/2001) shows that:

“Traditionally, land and labour are not separated; labour forms part of life and land remains part of nature, life and nature form an articulate whole. Land is thus tied up with the organizations of kinship, neighborhood, craft, and creed – with tribe and temple, village, guild, and church”. (p. 187)

Various scholars, including Latouche (2005b), Dupuy (2012), Erikson (2021), Larrère (1992), Mitchell (1998), Mitra-Kahn (2011) and Traimond (2011), place the emergence of the economy as a distinct conceptual entity between the 17th and the early 20th century. Emily Erikson (2021) delved in-depth in the process by which European economic thought emerged. It developed from the 17th century with the ascent of liberal politics and notably with the prolific literature produced through the interaction between English merchants and governments. She points out that the rise of what would become classical economics started with pamphlets that promoted policies beneficial to specific companies. This development was not without conflict as pamphlets often clashed in theory and philosophy, reflecting competition between different trade interests. A key figure discussed is Thomas Mum, a member of the East India Company (see also Section

3.3.5.1), whose writings came to underpin the mercantilist theory dominating Early Modern economic thought. Central to Erickson's argument is the idea that merchants utilised these economic writings to influence trading policies, petition for monopolies, and improve their standing and the status of their companies. These relations led to the development and proliferation of new economic thought.

The delimitation of an economic realm took off with the works of pre-classical and classical economists, such as Hobbes, Locke, Bentham, Quesnay, Smith and Ricardo (Latouche, 2005b). In parallel to the rise of capitalism, the so-called economic interactions were then viewed as the result of spontaneous, peaceful economic processes, which contrasted with the violence and the illegitimate power of earlier rulers, such as kings and churches. The economy would be the realm of productivity and efficiency, while politics tends to be seen either as coercive, corrupt, or wasteful (Nitzan & Bichler, 2009). The economic sphere is then seen as regulated by economic laws and analytically distinct from politics and the rest of nature. This split paved the way for liberalism, which advocates little government involvement in economic issues (Mirowski, 1991). Pinpointing the exact moment "the economy" was acknowledged as a self-contained entity largely within society can be elusive. However, according to Mitchell (2014), it is only since the 1930s and 1940s in Western society, with an economy viewed through the lenses of money flows regulating production, distribution, and consumption inside national borders and international exchanges. From Mitchell's viewpoint the development of this conception of the economy owes to the emergence of accounting systems and statistical tools, such as national accounts and GDP. The rise of these systems and tools has also changed the way we perceive the role of government and financial institutions in managing "the economy". The ability to measure and track economic performance has contributed to the evolution of fiscal and monetary policy and the increasing reliance on these tools for economic regulation (Schmelzer et al., 2022).

Despite being "invented", the economy, commonly understood as *the sphere of continuous supply of material resources to satisfy needs* (Latouche, 2001), does not remain a pure mental paradigm; this colonisation of our social imaginary has concurred with concrete practices aligning in different ways and to different degrees (according to the context) with the worldviews of dominant economists, which are generally seen as opposed to degrowth objectives (Latouche, 2014b). But empirically, these practices are so deeply interwoven with wider social, political and ecological processes that some argue

that they cannot be understood with a pure economic viewpoint (Bichler & Nitzan, 2021a; Jaeggi, 2018; Latouche, 2016; Nitzan & Bichler, 2009; Traimond, 2011). This point echoes Granovetter (1985), who contended that economic action is always embedded in networks of social relations. As Jaeggi (2018) emphasises, “the economy” is not merely surrounded, conditioned or enabled by social relations – which would mean that it still forms a distinct sphere – but “rather part of the form of life itself and its respective dynamic” (p. 123).

Today, the economic system is rarely seen as totally self-regulating and purely autonomous – even most contemporary neoclassical economists recognise that “market failures” can occur, necessitating government intervention. Ecological economics views the economic system as embedded within the social system, which is itself embedded within the ecological system (Petit et al., 2022). When it comes to studying the dynamics of capitalism, contemporary theories (especially heterodox ones) now understand capital accumulation as determined not only by traditional economic inputs but also by a broad range of extra-economic relations. However, as Nitzan and Bichler (2021) argue, despite the growing recognition of the influence of power, nature and culture, most theorists, from neo-Marxists to institutionalists (e.g. Boyer, 2002; Poulantzas, 2013; Wallerstein, 1974/2011), still treat capital as a primarily productive-economic entity, with broad power determinants considered external to accumulation proper.^{45,46} For the formally minded, Bichler and Nitzan (2020b, p. 7) summarise this process with the following equation:

$$\frac{\Delta K}{K} = F(e_1, e_2, e_3, \dots, e_n; e_{e1}, e_{e2}, e_{e3}, \dots, e_{em})$$

⁴⁵ Bichler and Nitzan (2020b) explain in more detail: “If during the 1950s the Communist Party excommunicated Hegelian heretic Henri Lefebvre for daring to make ‘urban space’ – previously an aspect of the superstructure – an autonomous historical entity, by the 1970s such transmutations were no longer frowned upon. By then, Louis Althusser was already busy ‘overdetermining’ materialist history with additional, non-economic factors – including ‘ideology’, which he shifted from the superstructure over to the productive base. And this relocation, unthinkable during the Party’s Stalinist era, was just the beginning. One of Althusser’s students, Nicos Poulantzas, endowed the state with ‘relative autonomy’, while another, Michel Foucault, abandoned economic determinism altogether in favour of ergodic power. In parallel, Dependency and World-Systems theorists such as Gundar Frank, Arghiri Emmanuel, Samir Amin and Immanuel Wallerstein anchored the history of capital accumulation and capitalism more generally in the global military expansionism of the European superpowers. The Regulation and SSA schools took these conceptual expansions a step further by adding to the equation a far broader extra-economic input – the ‘mode of regulation’ or ‘social structure of accumulation’” (p. 7).

⁴⁶ See also the critique of the Regulation school by Latouche (2005b), who is not convinced by its “historicization” of the economy.

in which capital accumulation ($\frac{\Delta K}{K}$) is an economic function of traditional economic inputs (e_i), and a broad range of extra-economic relations and institutions (e_{ej}). This means that in the end, capital remains an economic entity.

From a perspective that emphasises the interconnectedness of the ongoing processes that make up society (see Section 1.4.1), this enduring analytical bifurcation between capital accumulation and power limits our understanding of the complex dynamics of capital and socio-ecological transformations; and thus requires new understandings of accumulation (Nitzan & Bichler, 2000a).

2.4.2 ... to its escape

“Degrowth society cannot emerge from the iron corset of scarcity, needs, economic calculation, and homo oeconomicus.”

— Serge Latouche (2012, p. 77)

Among the thinkers who heavily influenced degrowth, Nicholas Georgescu-Roegen was a prominent critic of the mechanistic paradigm of economists, i.e. in which objective economic entities interact like physical objects following Newtonian laws. He laid the groundwork for degrowth thinking’s resistance to all economic approaches to growth (Slim, 2015). Georgescu-Roegen condemned economists’ view of the economy as a closed system that could function independently (see e.g. Figure 5):

“One need only thumb through an ordinary textbook to come across the typical diagram by which its author seeks to impress upon the mind of the student the circularity of the economic process. The mechanistic epistemology, to which analytical economics has clung ever since its birth, is solely responsible for the conception of the economic process as a closed system or circular flow.” (Georgescu-Roegen, 1971, p. 281)

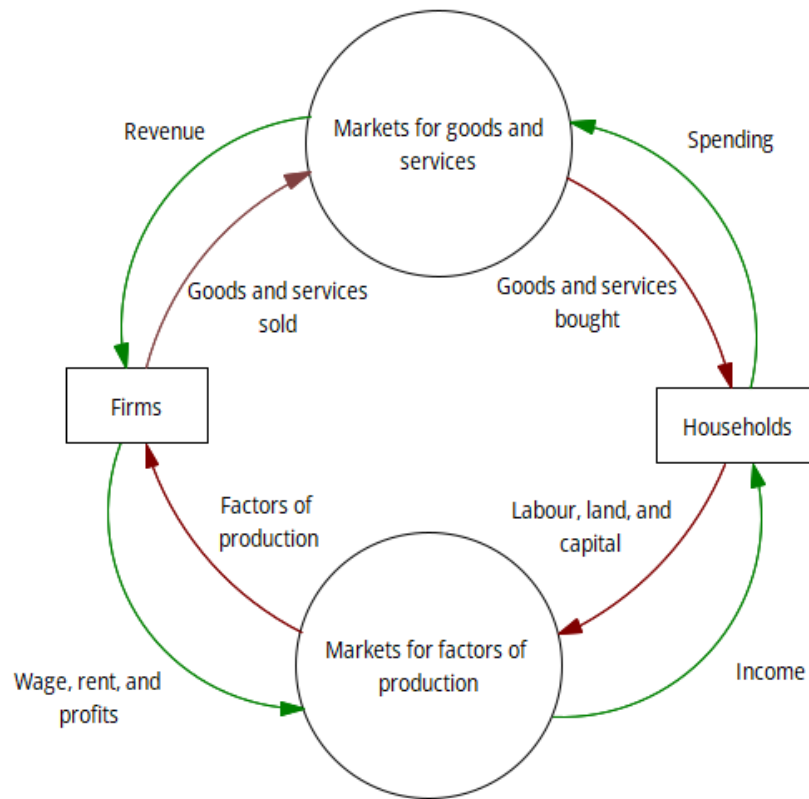


Figure 5. The circular flow model of the economy. Adapted from Mankiw and Taylor (2006/2021, p. 20)

Against the extensive use of economic lenses to make sense of the world’s complexity, voices have been raised in favour of, in Gorz’s (2002) words, “de-economising the imaginary” (p. 19, mt). Specifically, the economisation of our imaginary has been forcefully criticised by Serge Latouche (2005b, 2011), who emphasises the economy’s constructed nature, an *invention*. In that context, he describes the economy as a system of self-referential representations instituted in the Western modern imaginary:

“Building an economic ‘sphere’ [...] is about a production of representations. The operations that we consider to be economic, obviously, can only appear with the existence and therefore the previous production of a discourse and concepts which show them to us as economic [...] The outcome of the process is the constitution of a limited set of concepts necessary and sufficient to account for a reality that it imposes to see as economic.” (Latouche, 2005b, p. 17, mt)

Within the concepts economists use, Latouche (2005b) distinguishes a stable *nucleus* and a wider *corpus*, with some new categories appearing throughout the evolution of economic thinking. For this purpose, he examined major French-language

economic dictionaries between 1826 and 1993. The nucleus identified, with 28 economic concepts (see Table 3), is rather closed in on itself and unchallenged: “the semantic relation does not go from the corpus to the core, but conversely from the nucleus to the corpus” (Latouche, 2005b, p. 31, mt). In other words, for him, the economic sphere economists have conceptualised has not been very permeable to external contributions, compared to other disciplines, and has tended to resist fundamental change – it has rather consolidated itself over time.

Table 3. The nucleus of 28 economic categories identified by Latouche

1. Accumulation	15. Investment
2. Agent	16. Commodity
3. Need	17. Price
4. Good	18. Production
5. Capital	19. Product
6. Consumption	20. Profit
7. Crisis	21. Scarcity
8. Growth	22. Rent
9. Demand	23. Income
10. Division of labour	24. Wealth
11. Exchange	25. Wages
12. Saving	26. Work
13. Equilibrium	27. Utility
14. Interest	28. Value

To illustrate, drawing on basic orthodox and heterodox economic knowledge (Jo et al., 2017; Mankiw & Taylor, 2006/2021), the core categories identified by Latouche can be connected in the following way to describe the economy.⁴⁷ Within the economic sphere, agents, including individuals and firms, engage in economic activities to fulfil their *needs* and preferences. These needs generate demand for *goods* and services, which are products that deliver *utility* or use *value*. *Production* requires the *division of labour*

⁴⁷ Note that although they are foundational to economics, each specific school of economic thought may not use them all, or might differ in the importance given to each category and in how the categories relate to each other.

and necessitates *capital*. To *accumulate* capital, economic agents allocate a portion of their *income*. This *income* may manifest as *wages*, *rent*, or *profit*. Agents participate in the *exchange* of *goods* and services via market mechanisms, wherein *prices* are determined by the forces of supply and *demand*. When demand surpasses supply, *scarcity* arises, leading to elevated *prices* and incentivising increased *production*. Conversely, when supply exceeds *demand*, *prices* decline, and *production* may contract. *Equilibrium* is attained when supply and *demand* are balanced, resulting in stable *prices*. *Investment* plays a pivotal role in the economic sphere, as agents utilise their *savings* to *invest* in *capital*, which subsequently fuels *growth*. This *growth* can lead to an *accumulation* of *wealth*, as *profits* derived from *investments* increase *income* and overall *wealth*. However, continuous *growth* may also precipitate overproduction and excessive *accumulation* of *capital*, potentially culminating in a *crisis*. *Interest* rates exert influence over the allocation of resources in the economy by affecting borrowing and investment decisions. Low-*interest* rates render borrowing more attractive, leading to heightened *investment* in capital and production. Conversely, high-*interest* rates deter borrowing and *investment*, potentially impeding economic *growth*. *Consumption* is another essential element of the economic sphere, as agents spend their income on goods and services, contributing to overall economic activity. *Wages* and *work* are interconnected, as *wages* represent the *income* that workers receive in exchange for their labour. Raised *wages* can stimulate *consumption* and *demand*, driving economic *growth*. In sum, these relations illustrate that the basic dynamics of the economy are explained with core economic categories forming a sphere of representations that mostly relate to and reference each other.

To paraphrase Eloi Laurent (2016), this economic “grammar” has served to create myths. Among them, a myth is the divide, and often opposition, between “the economy” and “the state” (and politics more widely). Another myth is that the economy produces first and politics redistributes later. When these myths are believed, it may seem logical that growth and markets-based solutions promoted by capitalists are relevant answers to socio-ecological calamities (Buller, 2022).

In the footsteps of the philosopher, economist and psychoanalyst Cornelius Castoriadis, Latouche argues that as long as our social imaginary is *colonised* by

economic representations,⁴⁸ it is much more difficult to see and practice outside the lenses that economists develop.⁴⁹ Latouche concludes that the economy should be *escaped* (Latouche, 2005b), because degrowth “is not about substituting a ‘good economy’ – *good* growth or *good* development for a *bad* one – repainting it green, making it slightly more social, or less inequitable, thanks to a better dose of state regulation or a hybridized economy via the logic of the gift and solidarity” (Latouche, 2012, p. 77). As Fournier (2008) explains, degrowth is all about breaking up with economic rationality. In that sense, the call for escaping the economy means, at the theoretical level, moving beyond economic lenses, reconnecting economic aspects with the whole web of interwoven processes that make up life, to better comprehend the world and change it in practice:

“This escape from the economy is at least as much a question of decolonising the imagination as one of enacting new practices, it calls for rethinking the economy (or as Caillé, 2005, puts it, ‘de-thinking the economic’), or rethinking ourselves outside economic relations, for example, by fighting against the reduction of human beings to their economic function, as producers and consumers (Ariès, 2005)”. (Fournier, 2008, p. 534)

While the critique of economism and the opposition to economics is not new (see Coleman, 2002), for Parrique (2019), escaping the economy at these two levels is nothing less than “the essence of degrowth” (p. 144). By coining “*sortir de l’économie*”, Latouche voluntarily plays with the ambiguity of “*économie*” in French, to reject both economic theories and economic practices: “the two meanings of the word “*économie*” (economics as theory and economy as social practice) are indissociable (even if they must be distinguished at a certain level)” (Latouche, 2009c, p. 310; mt).⁵⁰ To reduce the risk of

⁴⁸ According to Varvarousis, “The *social imaginary* for Castoriadis is the *magma* of social imaginary significations and of the images and schemes that are created in order to support it in a particular society (Castoriadis, 1975). [...] Thus, *the social imaginary is the shared collective imagination distilled in specific institutions, which operates as the ‘glue’ that holds a society together by being a representation of it*. In each society it is the social imaginary that determines what is real, worthy, possible, acceptable or desirable” (2019, pp. 498–499, emphasis added).

⁴⁹ The degrowth critique of economic thinking particularly concerns the neoclassical school, which overwhelmingly dominates the discipline of economics. In contrast, the most critical strand of ecological economics emphasises the economic sphere’s embeddedness in human activities and the natural world – and rejects the possibility of an autonomous economic logic (Passet & Vivien, 2011; Petit et al., 2022). However, most heterodox schools remain rooted in the view that capital is an economic entity influenced but separated from other spheres (Bichler & Nitzan, 2020b, p. 13).

⁵⁰ In this sense, Latouche differs from Polanyi’s critique of economism. The latter distinguishes between a “formal economy” (the economic ideology he rejects) and a “substantive economy” (a sphere which would exist in any society, oriented towards the material satisfaction of needs). For Latouche (2001, 2005b), the

confusion, I should made clear that I focus in this section on the escape from economism, i.e. being sceptical about economics as a self-referential system of representation of the world. This is a prerequisite for the second level, i.e. rejecting economic relations, which, in my view, encompasses an escape from capitalist practices – which is not addressed here but in Chapter 4.

Note that it does not mean that escaping economism involves rejecting all economic categories. For instance, Kallis (2018) argues that “[m]arket value is a reality and we cannot wish it away – we have to explain it and we have to understand how it [...] colonizes other values” (p. 55). It would rather be useful to attempt to move beyond their *self-referential linkages*, acknowledging and analysing the deep interconnectedness of economic categories with wide-ranging social, political,⁵¹ and environmental processes. Another example is GDP, which measures the total market value of exchanges in a specific time period and country, and is generally viewed as an indicator of economic activity. But the building and widespread adoption of this indicator and underlying logic is the outcome of political processes (Schmelzer, 2016a) and its growth reflects inherent power relations. It is, for instance, “rather an indicator of the extension of market power within this economy, namely the increase in the dependence of the population on commodity” (Gagnon, 2007, p. 14, mt). In other words, “escaping the economy” falls within what Coleman (2002) labelled “the holistic objection” (p. 15), which contends that traditional economics is too narrow, overlooking the integrated nature of political, social, and economic spheres.

Latouche (2011) notes that “[e]ven more than those of science and technology, the pseudo-laws of the economy thus deprive the citizen [...] of sovereignty, since they appear as a *constraint* that can only be managed and in no way contested” (p. 88, mt). In other words, under the guise of economic matters, the full spectrum of conflicts inherent

universal existence of the “substantive economy” is far from certain. He notes: “In reality, what Polanyi implicitly shows in the best pages of *The Great Transformation* is that the establishment of the economy as an autonomous sphere is first and foremost the construction of a social imaginary. The illusion of a substantive economy is also an effect of the rise of the imaginary of the formal economy.” (Latouche, 2001, app. II; mt)

⁵¹ Following Mouffe (2005), I consider politics or “the political” as “a space of power, conflict and antagonism” (p. 13). And more precisely, “the contested public terrain where different imaginings of possible socio-ecological orders compete over the symbolic and material institutionalization of these visions [...] a terrain that makes visible and perceptible the heterogeneous views and desires that cut through the social body” (Swyngedouw, 2014, p. 90).

to capitalism are less visible and contestable; the predominance of economic thinking reduces the democratic space necessary for the elaboration and the realisation of a degrowth transition (Fournier, 2008). This critique means that the worldviews dominated by economics are not only unhelpful but actively detrimental – it is the “economics is harmful” objection identified by Coleman (2002, p. 13).

To summarise, as I view and use it, the idea of “escaping the economy” is not a renunciation of the study of so-called “economic” processes, of capitalism and non-cultural drivers of growth, it is a question of moving beyond economism by developing a more holistic imaginary, new categories and new frameworks of thought to study, contest, and transform reality (Latouche, 2003). Thinking of “the economic” as deeply interconnected with the other aspects of our lives is essential to be able to understand where we are, where we should go and how. As the process thinker C. Robert Mesle (2008) explains:

“If reality is interconnected, relational, and dynamic, then thinking solely in terms of separation and changeless being is dangerous. Our ability to make sense of the world is at stake. The quality of our lives is at stake. Indeed, our survival is at stake. I don’t mean that our survival as a species depends on everyone becoming a process-relational philosopher, but I do mean that unless we can take seriously the ecological, cultural, religious, and economic interwovenness of our lives in this world, we are in serious danger of self-destruction.” (p. 11)

In that context, finding the exit of the economic fly bottle is an essential step in the becoming of a post-growth society. By emphasising the interconnectedness of all processes within society and in particular the inextricable links between economics, politics, and nature, this calls for a more holistic approach that goes beyond reductionist views on capital accumulation as an economic dynamic. Escaping the economy is a shift necessary “to really change the world before the change of the world condemns us” (Latouche, 2014, p. 218).

2.4.3 Capital as a productive good: Tweaking the economic process from the outside

Conventional understandings of capital as productive goods, i.e. as human-made, productive assets such as machinery, buildings, and equipment, focus primarily on the economic aspects of production and accumulation, keeping analytically external broader social, political, and environmental dimensions. Politics and nature are viewed as an

external force affecting the outcomes of capital accumulation but are absent from its very definition. The analytical separation between capital goods and the natural sphere can be traced back to the classical economics distinction between the factors of production: land, labour, and capital (see Section 2.2.1). Ecological economics has, however, emphasised the complementarity of these factors (Berkes & Folke, 1992), while they usually remain distinct substances: “it is not possible to create built capital [i.e. capital goods] without support from natural capital” (Hernández-Blanco & Costanza, 2018, p. 256). When it comes to analysing capitalist dynamics, nature is more an external resource than an integral part of capital accumulation. As Althouse (2022) contends, ecological macroeconomics (which comprises most of post-growth and degrowth economics)

“is therefore geared towards [...] an instrumental view of nature that tends to overlook the root causes and uneven consequences of environmental degradation. As such, the field specializes in managing symptoms and controlling the consequences of economic (de)growth, rather than providing a new platform for analyzing socio-ecological change.” (p. 158)

In this perspective, capital remains an economic magnitude. When capital is defined as capital goods, capital accumulation is a productive process and capitalism an economic system, in which the role of politics and power relations are not immediate:

“In economics [...] very little is said about [power], and even less on how it can be woven into an overall theory of capitalist markets. This criticism applies principally to neoclassical theory, although it can certainly be applied to many heterodox approaches”. (Monvoisin & Rochon, 2006, p. 5)

Economists who adopt the conventional view of capital as a stock of productive goods may consider the economy either as a self-regulating system that needs to be preserved from political influence (Friedman, 2002), or as a process that must be tweaked with external interventions (Bateman et al., 2010; Sweezy, 1942, pp. 348–349). While heterodox economics generally acknowledges the interdependence between the economy – seen as the “social provisioning process” (Jo, 2011) – and the wider social order, the accumulation of capital goods remains largely bounded in the economy from an analytical perspective. Even when they acknowledge that the accumulation of capital goods is institutionally embedded, economists tend to primarily focus on *economic* factors such as investment, labour productivity growth, technological change, “real” wages, financial dynamics, and interactions between different economic sectors and agents (e.g.

Vasudevan, 2017) to explain capital accumulation. In many cases, both orthodox and heterodox economists speak of “exogenous”, “external” or “extra-economic shocks”, or “intervention” (“by the state”, “by the government sector”), in an economic sphere whose capital accumulation dynamic, driven by economic rules, is perturbed, or corrected by policies and other external actions (Nitzan & Bichler, 2009).⁵²

In the degrowth (and post-growth, as well as steady-state) economics literature, the dualism between the economic and the political is often reflected in the study of top-down, systemwide conditions imposed by external political forces. One assumes negative growth, or the implementation of this or that policy, without explicitly addressing how the related preconditions can be achieved. Most degrowth, post-growth and SSE studies taking the perspective of capital as productive goods do not include governments and political institutions in the picture (e.g. Althouse et al., 2020; Bilancini & D’Alessandro, 2012; Heikkinen, 2020; Lianos, 2021; Trainer, 2016) or reduce them to government income and spending (e.g. D’Alessandro et al., 2020; Jackson & Victor, 2020; Monserand, 2022; Victor, 2008). Analytically, the political is thus mostly left apart. To explore the degrowth scenarios’ effects on economic dynamics, a world without politics is assumed, in which capital does not directly influence economic rules. Similarly, the conditions under which the exogeneous shaping of the economy could be made is not really economists’ concern. This way of thinking based on the demarcation between the economic and the political is illustrated clearly in the words of Lawn, when he examines the viability of a non-growing economy:

“Do investor-shareholders withdraw all their financial capital [in the event of a non-growing scenario]? No. They may seek to invest in other assets, but they grudgingly accept low returns when high returns evaporate. True, if profits initially declined in a steady-state economy, investor-shareholders may vent their displeasure by lobbying governments to remove steady-state institutions. If so, *this would have nothing to do with the viability of state-state capitalism and everything to do with greed and a lack of concern for future generations*”. (2011, p. 14, emphasis added)

⁵² For instance, in Post-Keynesian economics, a field that has been influencing degrowth and post-growth economics research (see Section 2.2.1), Pressman (2006) sees the state as providing “error-reducing mechanisms”. It is an “uncertainty-reducing institution” and represents “a source of economic power that can counter the power of large business firms” (Pressman, 2007, pp. 83–84). For Pressman (2006), its role is to rectify the natural behaviour of supposedly non-rational agents who “systematically make mistakes as they confront an uncertain world” (p. 132).

In sum, from the “capital as productive goods ” perspective, capital accumulation is ruled by economic dynamics, which noneconomic, exogenous factors disturb, stabilise or enable. The “economic system” is, to a large extent, isolated from politics and vice versa. It behaves following its own specific rules, economists theorise. Consumption, growth, income distribution, market prices and other *economic* processes are explained with *economic* categories, quantitatively expressed in *economic* units. From this standpoint, the rules of capital accumulation are created, changed, and dismissed from another sphere. Capital accumulation’s role in the making of society at large – and how it can be countered beyond the narrow economic sphere – is inherently ignored. In other words, political aspects are largely left out of the analyses, which limits our ability to think about change in a holistic way.

2.4.4 Marxian capital: The dialectic between the base and the superstructure

While Marx’s concept of capital incorporates nature, accumulation is an economic process *intertwined* with but *analytically distinct* from the political sphere.

Nature is, indeed, viewed as part of capital, and specifically of productive capital corresponding to means of production (*MP*, see Figure 4, Section 2.3.1; which includes machinery, buildings, and *natural resources*). While Marx acknowledged nature as a source of use value, for satisfying human wants and needs, it is, in parallel, considered a source of raw materials and a sink for waste, playing a passive role in production. In this sense, Marx’s view of nature’s role in production shares some similarities with Latouche’s (2005b) critique of the broader economic understanding of nature, which he calls “a technicism”, meaning that “humans must use their physical strength and ingenuity to take advantage of the means (land, raw materials, natural forces)” (p. 34, mt). In this context, nature’s value is mediated by labour (the quantity of labour necessary to extract resources), which is ultimately the sole source of value for capital (Somerville, 2021).⁵³ However, Marx also introduced the concept of the “metabolic rift” to describe the disruption of natural processes caused by capitalist production (Foster, 2000).⁵⁴ In this

⁵³ Georgescu-Roegen (1971), followed by ecological economists, criticised the Marxian value theory for regarding labour as the sole origin of value. See Pirgmaier (2021) for an overview of the debate.

⁵⁴ Note that this notion is controversial within eco-Marxian scholarship. The “metabolic rift” school, rooted in Marx’s idea that capitalism disrupts the natural metabolic balance between humans and nature, contrasts

sense, the Marxian concept of capital emphasises accumulation as a productive process grounded in social relations of exploitation, while recognising contradictions between capital accumulation and the natural world (see also Saito, 2023).

In parallel, Marx acknowledged the interdependence of economics and politics, but he maintained a clear distinction between the two spheres. Marxian political economists see this duality in ideologies, helping capitalist elites to avoid democratic control over accumulation; however, they argue that it has also appeared as a specific material reality under capitalism, which, for these scholars, needs differentiated analytical lenses (Wood, 1995/2016). Marx assumes, indeed, that capital accumulation is driven by the labour theory of value and the laws of motion of capitalism^{55, 56} (see Section 2.3.1), within the *base*, whose dynamics condition and are supported by the *superstructure*. The latter includes institutions not directly involved in production, such as laws, political formations, religion, education, ethics, culture, arts, and ideologies. These elements are built upon the base and serve to legitimise the relations of production between workers and capitalists. Without the superstructure, the class structure could not persist, and capitalists would be unable to maintain profit rates:

“In the social production of their existence, men inevitably enter into definite relations, which are independent of their will, namely relations of production appropriate to a given stage in the development of their material forces of production. The totality of these relations of production constitutes the economic structure of society, the real foundation, on which arises a legal and political superstructure and to which correspond definite forms of social consciousness. The mode of production of material life conditions the general process of social, political and intellectual life.”
(Marx, 1859/2008, p. 11)

with the “world-ecology conversation” championed by Jason W. Moore (2016), which views capitalism as a “world-ecology” that constantly reorganise and is influenced by nature.

⁵⁵ For instance, in the first volume’s afterword of *Capital*, citing a Russian reviewer, Marx acknowledges that he “treats the social movement as a process of natural history, governed by laws not only independent of human will, consciousness and intelligence, but rather, on the contrary, determining that will, consciousness and intelligence” (Marx, 1867/2010, p. 103).

⁵⁶ Emphasising the *objective* nature of the base, the Marxian political economist Geoff Pilling explains: “It is entirely irrelevant whether the capitalist is aware or unaware of the law of value. However the capitalist computes his rate of profit, the formation and movement of the rate of profit is explicable only in terms of the law of value. It is this law of value and its developed forms which determine the movement of capitalist economy, *laws to which the owner of capital is entirely subordinated*. He may, as an owner, not recognise the law of value, but it certainly recognises him! The capitalist may ‘conceive’ his capital in money form and ‘calculate’ his rate of profit in money terms – these are entirely secondary questions” (Pilling, 1980, Chapter 3, emphasis added).

The conceptualisation of the base and superstructure and their relation may differ according to the Marxian school of thought. For example, the historian Ellen Meiksins Wood (1995/2016), associated with “Political Marxism”, has strongly criticised more dominant approaches within Marxism for their tendency to establish too rigid a separation between the economic and political spheres, which serves, according to her, the interests of capitalists by depoliticising the economy. Remaining faithful to historical materialism, she continues to differentiate between the two spheres. But she reinterprets the base/superstructure distinction not as a fixed hierarchy but as an interplay, which should be examined in its unique historical context as opposed to being forced into a predetermined form:

“In one form or another and in varying degrees, Marxists have generally adopted modes of analysis which, explicitly or implicitly, treat the economic ‘base’ and the legal, political, and ideological ‘superstructures’ that ‘reflect’ or ‘correspond’ to it as qualitatively different, more or less enclosed and ‘regionally’ separated spheres. This is most obviously true of orthodox base-superstructure theories. It is also true of their variants which speak of economic, political and ideological ‘factors,’ ‘levels’ or ‘instances’, no matter how insistent they may be about the interaction of factors or instances, or about the remoteness of the ‘last instance’ in which the economic sphere finally determines the rest.” (p. 37)

However, the divide between the base and superstructure does not mean that Marx and those who build on his concept of capital deny the existence of any kind of politics in the economy; they notably show that competitive relations within the market – which may misleadingly seem neutral and voluntary – rely on labour exploitation. Furthermore, through the dialectical relationship between the base and the superstructure, Marx explores “how production and exploitation, organized through the process of accumulation, dictate the totality of human relations in capitalism” (Bichler et al., 2012, p. 5). However, as Nitzan and Bichler (2009) argue, in the Marxian perspective, the power processes other than labour exploitation – such as wars, colonisation, environmental harms, climate movements, protests, the action of police forces – are external to capital, rather than being as intrinsic components of the accumulation process itself. Similarly, McMahon (2022) contends:

“Marxism’s quantitative mode of analysis is based on a commitment that, fundamentally, economics and politics are separable. If capitalism is, in essence, a

mode of production, and if the circuit of capital is, beyond the appearances of price, rooted in labour values, a delineated economic sphere must exist. Otherwise, there is no logical reason why prices and profit should reflect material productivity, ever, or at all. [...] a Marxist theory of capitalist accumulation needs analytical boundaries between productive economic processes and everything else.” (p. 14)

Several critical theories have built upon and expanded this Marxian understanding of capital accumulation bringing nuances to Marx’s view on change, including the Social Structures of Accumulation theory and Gramscian theory. These two approaches have been used within degrowth studies (see Sections 2.3.2 and below). While each of these theories develops its unique perspective on capital accumulation, offering a particular understanding of the dynamic interplay between economic, institutional, and ideological factors in capitalist societies, they all build on and extend the Marxian view differentiating economics and politics.⁵⁷

As a result, when capital is analysed from the Marxian perspective, the dynamic between accumulation and degrowth transformations tends to be divided into distinct economic/productive and political analyses. On the one hand, the quantitative relationship between growth and capital accumulation emphasises the productive dynamic of capital, separate from broader political and ideological determinants: economic growth is viewed as the materialisation of capital accumulation (Andreucci & McDonough, 2015; Pineault, 2020; Schmelzer et al., 2022; see Section 2.3).

On the other hand, several degrowth studies inspired by Marxism have focussed on societal institutions (the superstructure) without clearly articulating their relationship with the (productive) base. For instance, Buch-Hansen (2018) identifies preconditions for a degrowth paradigm shift using insights mainly from transnational historical materialism : a “deep crisis”, “an alternative political project”, “support from a comprehensive coalition of social forces” and “consent”. But, the role and the dynamic of capital accumulation are not directly and explicitly addressed – even in the “deep crisis” precondition. Similarly,

⁵⁷ The Social Structures of Accumulation (SSA) theory is based on Marx’s capital accumulation theory but emphasises institutional and social structures. Successful capital accumulation in SSA is characterised by specific institutions and social relations, such as labour relations, financial systems, and state policies. Capital accumulation is tied to society as well as economics (Kotz et al., 1994). Similarly, Régulation theory, which draws on the Marxian concept of capital, acknowledges intricate linkages between economic structures and institutional arrangements. However, it remains focused on the economic aspects of capital. In this respect, Regulation theory preserves Marx’s essential concept of capital as an economic entity while allowing for a more complex examination of its relationship with other components of society (see Boyer, 2002; Jessop, 2001).

D’Alisa and Kallis (2020) and Koch (2020) employ insights from Gramsci and other Marxian approaches to explore how to change the state for degrowth transformations (see also Section 3.3.5). Antonio Gramsci (1971), introduced a crucial distinction *within* the superstructure, between civil society (cultural and ideological institutions such as the media, religious organisations, schools, and families) and political society (formal political and governmental institutions, including the state, judiciary, police, and military) (Morera, 1990, p. 28).⁵⁸ In D’Alisa and Kallis’, and Koch’s studies these institutions remain fundamentally external to the central process of capitalism – capital accumulation: “In capitalism, processes of production and wealth creation are structurally separated from the political processes of exercising coercive power and administrative control” (Koch, 2020b, p. 117).

Similarly, Klitgaard and Krall (2012), drawing on the Social Structure of Accumulation theory, argue that degrowth requires a “social structure of deaccumulation” to change “the rules of the game” (p. 251), referring to an institutional apparatus external to capital. Yet, it remains unclear what it consists of, as they admit, they “do not have the solution for exactly what the structure of a new economy will look like because this is a monumental task” (p. 251). While they explain the ways in which capitalist dynamics have internal contradictions, which prevent the creation of a prosperous economy with jobs for all within planetary boundaries, they fail to propose how an alternative could unfold.

In summary, the Marxian view on capital accumulation aligns with key degrowth arguments in acknowledging the inherent contradictions between capital accumulation (and thus growth) and biophysical balances. However, by keeping capital mainly rooted in a distinct economic sphere, this perspective runs counter to the objective of escaping economic worldviews. This limits the possibility of explicitly and directly addressing the entanglement between power, in its broadest sense (beyond labour exploitation), and accumulation. While degrowth cannot comprehensively be analysed or contested solely on economic or on political grounds, this dualistic approach obfuscates the profound intertwinement between economic and political dimensions under capitalism, restricting our ability to envision comprehensive socio-ecological transformations.

⁵⁸ Therefore, Gramsci maintains Marx’s focus on material economic conditions but adds a significant emphasis on culture and ideology. His concept of hegemony suggests that the ruling class maintains its dominance not merely through economic control, but also through ideological leadership and consent.

2.5 Conclusion: Towards a theory of capital accumulation beyond the economy?

“If you only know the individual threads, and even if you identify each one perfectly, you will never know the face of the tapestry.” (Morin, 2008, Chapter 10; mt)

Degrowth and growth-critical studies, utilising either capital as productive goods or the Marxian perspective, have investigated the foundations of growth within capitalism and economic and environmental consequences of degrowth transformations, mostly the quantitative evaluation of top-down policies on the one hand, and a discussion on the entrenchment between negative growth and capital accumulation on the other hand. While the insights of these exercises are insightful and degrowth scholars have made significant progress in reorienting degrowth economic thinking along heterodox lines, they fail to break away from the economic imaginary criticised by Latouche and other degrowth scholars.

These approaches face limitations due to the distinction they maintain between economics and politics. As Kallis (2018) contends: “Politics is not an exogenous force in which we intervene independently. The economy is not separate from the political sphere: that is a myth that economic models, even those of the best kind, perpetuate” (p. 167). This separation hinders us from escaping the economy's grip on our social imagination and prevents a holistic understanding of the interconnected processes constituting society and the role of broader power processes in the transformation of capitalism. Degrowth is indeed a holistic project that transcends the boundaries of “the economy”, that would benefit from an understanding of capitalism and its alternatives that goes beyond the divide between the economy, politics, and nature. If we acknowledge that degrowth is not a mere *economic* concept, the question of how degrowth transformations can unfold against the process of capital accumulation cannot be comprehensively addressed with an *economic* theory of change. This raises the question of whether we can study capital accumulation without falling into the traps of the self-referentiality of economic categories and if we can integrate wide-ranging forms of power and politics into our understanding of capital accumulation.

However, merely critiquing existing perspectives is not enough. The remainder of this thesis will assemble elements of dynamics for a degrowth theory of change. For this purpose, the next chapter introduces the Capital as Power perspective, a radical theory that views capital accumulation as a direct manifestation of broad power relations, beyond the economy, and put it in dialogue with degrowth elements. This approach will be further expanded with Social Practice Theory to investigate the obstruction of socio-ecological change by dominant capital groups (see Chapter 4). Drawing on them, I will propose new scenarios for the unfolding of degrowth transformations against capital accumulation (see Chapter 5).

3 Capital as Power and degrowth: A dialogue

“Ultimately, the way we respond to accelerating ecological duress comes down to a question of power – who has it, and to what ends it is exercised.”

— Adrienne Buller (2022, p. 141)

“We will coup whoever we want! Deal with it.”

— Elon Musk, on Twitter (24th July 2020), referring to a coup in Bolivia suspected of being linked to access to lithium

3.1 Introduction

Few critical scholars would deny that *politics* and *power* lie in every corner of capitalism. But if there is an analytical bifurcation between the *economic* and the *political*, it is difficult to understand comprehensively capitalist dynamics. Such a bifurcation is deeply imprinted in most approaches to political economy, or at the very least, in their concept of *capital* (see Chapter 2). As the radical political economists Jonathan Nitzan and Shimshon Bichler (2020b) remark, most economists consider capital to be a productive entity, and wider power determinants external to it – be they neoclassical economists, classical Marxists, or even “neo-Marxists, Gramscians, Regulationists, Dependency and World-Systems analysts, poststructuralists, institutionalists or behavioural economists” (p. 7), with the exception of Thorstein Veblen (1908a). In this context, the role of politics and wide-ranging processes of power (not limited to the exploitation of labour) in the very foundations of capital accumulation is not sufficiently exposed. This limits our understanding of how capital accumulation shapes our world and leaves room for socio-ecological change.

To address this issue, I examine a recent theory of capital, Capital as Power (Nitzan & Bichler, 2009), abbreviated to *CasP*, with which degrowth scholarship has

crucially lacked an engagement so far. This chapter attempts to put the core elements of CasP in dialogue with the degrowth literature and, especially, addresses the general implications of this perspective for the ways in which degrowth can unfold in the context of capital accumulation. In doing so, I develop key elements of dynamics of change.

CasP notably draws on some of Veblen's ideas while developing a specific perspective.⁵⁹ Nitzan and Bichler stress that capitalism is an encompassing mode of power, rather than viewing it primarily as a mode of production focussed on the relation between capital and labour. Contrarily to conventional views on capital accumulation as an economic or production-oriented process, for them, "the very purpose of power-driven capitalist accumulation is to *reshape* society" (Nitzan & Bichler, 2009, p. 209). From this perspective, "capital" has no direct conceptual connection with the "means of production", but only with what modern capitalist owners are, in their view, primarily interested in: finance⁶⁰. In this way, the central process of contemporary capitalism is *capitalisation*, that is, the ongoing valuation of expected future profits from their income-generating assets. CasP views pecuniary earnings not as a mere economic quantity, but as a symbol of a struggle between leading corporations acting with allies within governments and other power institutions against multiple oppositions, to actively form and reorganise the overall direction of society. In this sense, capitalisation quantitatively symbolises the confidence of capitalists in their relative ability to organise production, but also to shape and take advantage of environmental change, cultural shifts, ideologies, the making of laws, geopolitical conflicts, colonisation, the criminalisation of activism, the hindrance to the free movement of people – and the list could continue: "every power process – and not just 'economic' ones – that bears on expected earnings is discounted into capital values and in that sense becomes part and parcel of capital" (Debaillieux et al., 2016, p. 9). In the theory of CasP, the main signature of capitalism is the hierarchisation, control, and sabotage of society's creativity and well-being.

Degrowth transformations can be "cultural", "social", "economic", "political", "bottom-up", "top-down", "reformist" or "radical" (Demaria et al., 2013; Schmelzer et al., 2022; Treu et al., 2020). If we accept CasP, these processes of transformation may challenge capitalists' confidence in their ability to rule in different ways and to different

⁵⁹ A major difference between Veblen and CasP is that the former is evolutionist while the latter is dialectical (see Nitzan & Bichler, 2019).

⁶⁰ This has commonalities with Schumpeter's and, especially, Veblen's views (see Section 2.2.1).

degrees and are conversely inhibited by the grip that capitalists develop on society. Indeed, powerful capitalist entities are constantly restructuring society to incrementally increase their relative power. Degrowth transformations, such as the building of grassroots alternatives, the realisation of institutional reforms, and oppositional activism are thus an integral part of the conflictual process of accumulation. While it is not possible to “erase” capitalism and start from a clean slate (Boonstra & Joosse, 2013), this dynamic highlights both the possibility and the immense difficulty of a degrowth transition starting from within capitalism.

The chapter seeks to offer an overview of the dynamic of capital accumulation from the CasP perspective, while discussing its multiple implications for the unfolding of degrowth transformations. It oscillates between CasP theory and degrowth, outlining important ideas from the former and then showing their relationship to or illustrating it with the latter. Ultimately, it proposes four causal loop diagrams (CLDs), one in each main section, summarising dynamics at play, and constituting elements for the theory of change for degrowth developed in this research.

The chapter is organised as follows. Section 3.2 outlines the *CasP* perspective, showing how it integrates power and politics in the very concept of capital. Section 3.3 explores that perspective’s central process, *capitalisation*, by which heterogeneous power processes are quantified as a single value. As power is never absolute, but always relative, it argues that the objective of owners who accumulate capital is not to maximise profits but to accumulate more than average: accumulation is inherently *differential*. The different elements operative in capitalisation are discussed, showing their potential links with socio-ecological transformations. Section 3.3 delves deeper into the dynamics of differential accumulation. It focusses on the concept of *dominant capital*, the leading group of government-backed corporations at the centre of the capitalist world. *How* this group exerts power over society is addressed. This reflection is then deepened with a discussion of the concept and role of the state in CasP theory, as well as how CasP’s concept of the state can inform and be informed by degrowth’s theories of the state. Section 3.4 reflects on the link between accumulation, growth and energy and material use. It describes four paths or regimes of differential accumulation before discussing the relation between power relations and energetic-material use. In Section 3.5, the conditions for capitalism to end are examined. Section 3.6 extends the dialogue between CasP and degrowth by raising open questions. Finally, the conclusion (Section 3.7) draws general

implications from CasP for the unfolding of degrowth and identifies new research avenues.

3.2 Beyond the economy: Capitalism as a mode of power

What if capital were understood as power over society rather than a productive entity or a social relation of exploitation primarily rooted in production? CasP starts from the idea that the capital that drives capitalism is *finance*, understood as the ownership⁶¹ of stocks, bonds, derivatives, and other claims on future earnings. From this perspective, finance is a language that serves to dynamically reorganise the capitalist order and symbolises power in general, over the many facets of society (Nitzan & Bichler, 2000a, 2009). Yuri Di Liberto (2023) synthesises clearly what Nitzan and Bichler call a “creorder”⁶²:

“capitalism isn’t simply an order; it is a creorder. It involves the ongoing imposition of power and therefore the dynamic transformation of society. In this process the key is differential accumulation: the goal is not merely to retain one’s relative capitalization but to increase it. And since relative capitalization represents power, increases in relative capitalization represent the augmentation of power. The accumulation of capital and the changing power of capitalists to transform society become two sides of the same creorder.” (p. 312)

While this is not the only perspective that addresses power in capitalism, it is unique in making wide-ranging power relations especially explicit and incorporated into the very concept of capital.⁶³ To better understand the implications of this approach, this

⁶¹ Note that the traditional notion of ownership may not be entirely in line with process philosophy, as it relies on a static understanding of objects and relationships. However, in this context, ownership is understood as a dynamic and fluid concept. It is not a permanent relationship between an individual or group and an object, resource, or property, but rather a temporary, contextual and partial control over some particular processes.

⁶² Nitzan and Bichler’s concept of “creorder”, a dynamic that perpetually creates order within capitalism through processes of power imposition and differential accumulation, may share some similarities with the notions of becoming and deterritorialisation/reterritorialisation in the work of Gilles Deleuze and Félix Guattari (1980/1987), who are French philosophers often associated with processual thinking. Much like the idea of “becoming”, where reality is a process of continuous transformation, the “creorder” conceptualises capitalism as an ever-evolving, rather than static process. Furthermore, Deleuze’s ideas of deterritorialisation and reterritorialisation, representing the continual reshaping of societal assemblages, may find echoes in Nitzan and Bichler’s depiction of capitalists’ shifting power to transform society. Lastly, both perspectives may share a similar view on causality, with actions and events intertwined in complex, interconnected ways that modify and simultaneously create the world (see Nitzan & Bichler, 2009, p. 281).

⁶³ Note that Nitzan and Bichler critique Marx’s theory of the capitalist mode of production and offer an alternative perspective while acknowledging their indebtedness to his foundational ideas. These includes the concept of the “capitalist system”, the political nature of capital, and dialectical thinking, which have shaped CasP analyses of contemporary capitalism (Nitzan & Bichler, 2009, p. 84).

section explores the key concepts of capital, power, capitalisation, and (differential) accumulation in dialogue with degrowth.

3.2.1 Including wide-ranging forms of power into capital

In CasP, power is not a force that shapes capital from the outside; capital itself is (*a symbolic representation of*) power. Power processes neither *distort* nor create the “structures” *supporting* the accumulation of capital. Thus, not all power is capital, but all capital *is* a form of power. However, what is meant by *power*? First of all, it should be clear that, from the CasP perspective, capital is not only “market” or “economic power” (Mau, 2023; Sacchetti & Sugden, 2003), but power *at large* – which includes also the ability to shape, for instance, political will, environmental conditions, international relations, norms, beliefs, arts, and education. The political economist Tim Di Muzio explains:

“The capital as power approach does not reject that labour can be ‘exploited’ in the sense of being poorly paid or mistreated but *it does reject* that the sole source of corporate earnings is the exploitation of labour power. Instead, [in] order to generate greater earnings (what we call differential earnings/profits) than their corporate peers, the managers of corporations try to shape and reshape the terrain of social reproduction in their favour – from advertising and marketing to obtaining patents, laws suits, lobbying and the list could continue” (Di Muzio, 2018; original emphasis)

While degrowth scholarship lacks precise conceptualisations of power, in CasP it departs from the usual notion of power as a resource that can be *used* to coerce, like a stock of energy used to exert a force (Bichler & Nitzan, 2021b). As Herbert Marcuse (1940/1999) argues, “[f]orce is nothing apart from its effect” (p. 109). In other words, the consequences of force are what truly define it, not the mere act of using force itself. Similarly, Bichler and Nitzan see power, under capitalism, as a quantitative relationship manifesting wide-ranging processes – hereafter referred to as “power processes”. In this sense, power is the ultimate end of accumulation and simultaneously refers to the methods by which this goal is realised (Nitzan & Bichler, 2002, p. 9). For Bichler and Nitzan (2018), power, and thus capital, is the confidence of rulers in the obedience of the ruled. It is *relational*, when rulers attempt to impose their rule over others and control society, they are necessarily met with varying degrees of resistance (Bichler & Nitzan, 2012). Power is not absolute but *relative*; its observation can only indicate who is more powerful than whom – at any given time – within the dynamic social order. To

recapitulate, power is *confidence in its relative ability to shape and re-shape society, while experiencing and overcoming resistance*⁶⁴.

The “rulers” and the “ruled” are not stable entities, this distinction is contextual – it is an outcome of power processes rather than a pre-determined quality. However, CasP's emphasis on rulers is not accidental. Rather than assembling a general theory of capitalist society from the bottom up, Bichler and Nitzan have studied the development of modern capitalism by focussing on the perspective of the world's leading capitalist groups. Looking at capitalism “from above”, the pair identify rulers as a set of coalitions between the largest corporations and key government entities, while the ruled is the rest of society (this is discussed further in Section 3.2). Capitalist power thus refers specifically to the confidence of the dominant groups of capitalists, together with their allies within governments and other institutions, in shaping society against multiple oppositions. For example, let us consider that Walmart and Carrefour, two global grocery retailers, have capitalisations of 370 billion and 14 billion USD, respectively. From the perspective of capitalists, Walmart can be viewed, at that time, as 26 times more powerful than Carrefour.

Note that power is not external to the natural world and that human-nature relations are considered part of society (see Section 1.4.1). Therefore, when thinking about power, “resistance” or “opposition” must, in my view, be understood in the widest sense. The non-linear responses of the biophysical sphere to the overstepping of limits can be seen as forms of resistance that will disadvantage or benefit certain capitalist coalitions. More broadly, environmental events related to shifting climate dynamics, the spread of diseases, ecological changes, or even the laws of thermodynamics, while they shape or interweave with human actions, dynamically shape the ability of capitalist groups to transform the world and thus should influence their confidence in this ability – they may be forms of resistance or catalysts to their power. In this context, *resistance* does not require to include any notion of *intention* or *consciousness* (just as in the physical sense of the term).

Though Nitzan and Bichler's primary focus is not directly on nature, their broader concept of capital can still be applied to it. Their work addresses environmental issues in

⁶⁴ This perspective on power encapsulates the concepts of “power to” – the ability to act, and “power over” – the capacity to dominate others (see Avelino, 2021).

a scattered manner (e.g. Bichler & Nitzan, 2020a), but other CasP scholars, like Di Muzio (2015a) and Fix (2019), tackle these concerns more explicitly. In this context, the relative control of human-nature relations can be seen both as a manifestation of power (and thus a parcel of capital) and as an arena in which the struggle for power takes place. This perspective emphasises that appropriating and exploiting natural resources⁶⁵ is not only a productive activity, but also an expression of power at large.⁶⁶

By including power processes whose scope is infinite in the very definition of capital, this approach attempts to move beyond the traditional boundaries between the political, economic, and natural spheres – which several degrowth scholars have criticised (Latouche, 2005b; Schmelzer et al., 2022, p. 47). In particular, the conventional dualism between the economic and political spheres is usefully suspended to highlight the deep interconnectedness of dominant groups of owners and key governance entities (Nitzan & Bichler, 2000, 2009; see Section 3.3). For Nitzan and Bichler (2009), the “misleading fragmentation” (p. 30) between economics and politics confuses what capitalism is about:

“Now, this bifurcation is certainly relevant and meaningful – but only up to a point. From the everyday perspective of a worker, an unemployed person, a professional, even a small capitalist, economics and politics indeed seem distinct. As noted, most people tend to think of entities such as ‘factory’, ‘head office’, ‘pay cheque’ and ‘shopping’ differently from the way they think of ‘political party’, ‘taxation’, ‘police’, ‘military spending’ and ‘foreign policy’. Seen from below, the former belong to economics, the latter to politics.

But that is not at all what capitalism looks like from above. It is not how the capitalist ruling class views capitalism, and it is not the most revealing way to understand the basic concepts and broader processes of capitalism. When we consider capitalist society as a whole, the separation of politics and economics becomes a pseudofact.

Contrary to both neoclassicists and Marxists who see this duality as inherent in

⁶⁵ This phrasing in terms of resources appropriated and exploited is not in line with the grounding of this research in process philosophy, because it conveys the idea that nature would be a static entity and external to humans. It must be understood along the lines of “controlling the continuous flow and transformation of natural processes”. Furthermore, I refer to “society” and “nature” for the sake of clarity, but it should be clear that both are inextricably interconnected.

⁶⁶ For example, take the Deepwater Horizon oil spill (or BP oil spill) that occurred in the Gulf of Mexico on 20 April 2010, when the oil rig of the same name exploded, and the subsequent fall in BP’s capitalisation, illustrating the deep interconnection of economic, political and natural aspects in capital accumulation. While this disaster caused considerable environmental damage to marine ecosystems, it also had a significant financial impact on BP and other affected companies. It ultimately led to stricter safety regulations and political discussions on the use of fossil fuels (Bond, 2013).

capitalism, in our view it is a theoretical impossibility, one that is precluded by the very nature of capitalism.” (Nitzan & Bichler, 2009, p. 30)

In a similar way to Marxism, Nitzan and Bichler recognise that the analytical distinction between economics and politics is real in *discourses*. However, when it comes to the *actual process of accumulation*, in CasP, this dualism is not meaningful anymore, because regardless of the specific categories they fall under, capital symbolises all types of power. Separating the spheres implies, for them, a reductive view of the power of ruling capitalists over society (see Section 3.3.5).

The dissolution of the ontological borders of the economic sphere finds common ground with degrowth’s critique of economism, which the prominent degrowth scholar Serge Latouche coined as “*sortir de l’économie*”, i.e. “escaping” or “exiting the economy” (Fournier, 2008; Latouche, 2009a, 2012; Latouche & Jappe, 2015), and his key critique of the economic sphere as a distinct sphere of representation (Latouche, 2005b; see Section 2.4).

The way in which the economic and political spheres are separated or united has implications for what capitalist power is, how it is imposed, how it can be challenged and how a post-growth society can emerge. By defining capital beyond the economic/political divide, CasP offers new power-centred lenses for understanding and bringing about socio-ecological changes under capitalism. As D’Alisa and Kallis (2020) note, in the absence of a theory on how political change can occur, degrowth scholars advance their proposals in a void. The same reasoning can be made for the generalisation of non-capitalist practices and the dismantling of capitalist structures through frontal opposition. If broader power dynamics in capitalism are not scrutinised first, we risk trying to change the rules of a game that we do not understand first. In that sense, a comprehensive and holistic understanding of capitalist power is necessary to clearly see what is being challenged by degrowth and move towards a more extensive theory of change for degrowth.

3.2.2 Capitalisation of power: From qualities to quantities

This section delves into the crux of the capitalisation process, emphasising the significance of the conversion of the heterogeneous qualities of life into homogeneous financial quantities. Providing a historical overview of capitalisation, it addresses how this process enables capitalists to grasp the extent of their power and consequently shape various aspects of business activities, such as price determination and earnings. In doing so, it posits that prices serve as a reflection of wide-ranging power dynamics, with capital

representing not merely economic factors but the direct manifestation of its owners' power over society. Furthermore, the section highlights the potential for socio-ecological transformations to be integrated into capital valuation, while they affect expectations about earnings patterns. Lastly, the section explores how capitalisation has been discussed within the context of the degrowth literature, offering valuable insights into its role and implications.

As already emphasised by Thorstein Veblen (1921/2001b) and other political economists (e.g. Aglietta, 2017), owners are not as interested in production as they are in their *financial* value, Nitzan and Bichler (2009) argue:

“The modern corporate owner does not view capital as comprising tangible and intangible artefacts such as machines, structures, raw materials, knowledge and goodwill. Instead, he or she is habituated to think of capital as equivalent to the corporation’s equity and debt.” (p. 8)

In this respect, CasP criticises the focus given to (past) material production in the explanation of modern capitalism. Instead, for Nitzan and Bichler (2009, p. 262), capital is finance and only finance.⁶⁷ More precisely, they argue that capitalism found its origins in the spread of the forward-looking practice of capitalisation: the valuation of how much money owners think they can earn with some asset⁶⁸ in the future.^{69,70}

While evidence of capitalisation practices can be found from as early as the 14th century, among Italian merchants, and have been instrumental in the evolution of capitalism⁷¹, it is since the 1950s that the use of capitalisation had become omnipresent.

⁶⁷ CasP sees the traditional dichotomy between the *financial* (money, finance) and *real* spheres (production, consumption) as irrelevant; and considers finance as key to capitalism from its beginnings (Bichler & Nitzan, 2020b; Park & Doucette, 2016).

⁶⁸ The term “asset” may convey the idea of a static entity; however, it should be considered here, as a dynamic process. For example, a company, is always in motion.

⁶⁹ Capitalisation relies on calculations but is indeed subjective. In their anthropological study on capitalisation, Muniesa et al. (2017) show that capitalisation involves a fictional representation of how profits will come about.

⁷⁰ This forward-looking view finds common ground with the economic sociologist Jens Beckert (2013, 2016) who contends that the representation of the future plays a crucial role in shaping present action and the course of capitalism – joining the efforts to integrate the role of imagined futures into social sciences, notably initiated by Alfred Schütz (1972), Niklas Luhmann (1976), Cornelius Castoriadis (1975/1998), Ann Mische (2009) and Jasanoff (2020). He argues that collective imaginings of individuals and societies, which he refers to as *fictional expectations*, shape capitalism. Fictional expectations refer to anticipation of future processes that are not based on any objective information. For Beckert, these expectations shape the way entities make decisions and interact – and drive capitalist dynamics.

⁷¹ de Roover (1948/2013) indicates 14th-century Italian merchants often allowed foreign customers to pre-pay their bills and obtain a discount (a *sconto*) for doing so. The discount was calculated by applying an

This process helped formalise and standardise the way people and businesses invest in the stock market and allocate resources (Nitzan & Bichler, 2009, p. 158). While asset valuation methods have heavily developed over the past century (Moro Visconti et al., 2018; Ratcliffe & Munter, 1980; Rutterford, 2004), the growth in financial assets has exploded globally since the latter half of the 20th century, particularly from the 1980s onwards – which a range of political economists have studied as “financialisation” (e.g. Epstein, 2005; Sawyer, 2022). For example, according to the McKinsey Global Institute (2021), over the first eight decades of the 19th century, financial assets expanded at roughly the same rate as GDP, then accelerated. Global financial assets accounted for 12 times global GDP in 2020, compared to 4.4 times in 1970.

The parallel rise of large-scale financial markets and modern corporations in the 20th century have transformed capitalisation into a “full-fledged ideology, complete with detailed bureaucratic procedures, a rigid ethical code and trained professional cadres” (Nitzan & Bichler, 2009, p. 155). Capitalisation is now universal and instrumental in the orientation of human activities (Muniesa et al., 2017; Nitzan & Bichler, 2009, p. 270). In this regard, the rationality of rulers and their subjects is not significantly different; the extraordinary persistence of capitalism is considered by Nitzan and Bichler as largely due to its capacity to subject both governing and governed parties to the same unifying principle of capitalisation (Debailleul et al., 2016). This highlights the deeply embedded nature of capitalisation in modern society. Nitzan and Bichler contend:

“Unlike [Marx’s] capitalist mode of production, where the objective ‘material’ base conditions if not determines the conceptual-ideological-legal superstructure, in CasP

interest rate between the time of actual payment and when the bill had to be paid. However, this proto-form of capitalisation was considered usury and strongly opposed by the Church, at least until the 15th century (de Roover, 1948/2013; Faulhaber & Baumol, 1988). From small and modest beginnings, capitalisation became more and more widespread among bankers and through the emergence of stock exchanges (Di Muzio, 2015a), whose first modern incarnation was established in Amsterdam in 1611. It was initially a means of gathering financial resources for the first publicly traded company, the Dutch East India Company, created a few years before (Sytze Mosselaar, 2018) – a key colonial force (Laarman, 2013). As the financial historian Renald Michie (2008) shows, during the 18th century, the global securities market grew significantly. Numerous stock exchanges were established in different financial centres around the world. In addition to being an instrument of colonisation, serving the European imperial project (Lavelle, 2004), governments used these stock exchanges to issue public debt for funding military activities – such as Europe’s frequent wars and the United States’ struggles for independence (Michie, 2008). In the second half of the 19th century, stock exchanges developed into “central institutions of the capitalist world” (Michie, 2008, p. 117); used to finance industrial projects, they acted as an important link between national and international money and financial markets (Lavelle, 2004; Michie, 2008). Later, Irving Fisher’s (1907) book “The Rate of Interest” delved deeply into the reasoning for discounted value. He proposed that discounting should be universally applied to all income-generating entities.

the mode of power and concepts of power are enfolded in one another: the actual organization of society and the concepts through which this organization is conceived, described, constructed and criticized are intertwined.” (Debailleul et al., 2016, p. 53)

In modern capitalism, capitalisation is a form of operational symbolism (Martin, 2019), both allowing the distribution of power to be grasped and actively shaping it. The importance of capitalisation is reflected in the capitalist tendency to turn everything into assets – an asset is an entity or process “that can be owned or controlled, traded, and capitalized as a revenue stream” (Birch & Muniesa, 2020, p. 9). However, as Birch (2022) contends, it is not only an ownership claim, “it is, more fundamentally, a political claim on the future.”, i.e. in the ability to shape it. The growing influence of capitalisation has reached virtually all aspects of the socio-ecological world, varying from context to context, including energy, food, agriculture, water, education, transport, work, culture, social services, the penal system and war.

The core principle of capitalisation appears almost fixed but it generates open-ended historical paths and outcomes, resulting in a dynamic capitalist system:

“The [capitalization] formula is special in that it doesn’t specify what the mega-machine [i.e. the capitalist society] should look like. Instead, it stipulates a ‘generative order’, a fractal-like algorithm that allows capitalists to reconstruct and reshape their mega-machine in innumerable ways. The algorithm itself changes so slowly that it seems practically ‘fixed’ (the basic principle of capitalization hasn’t changed much over the past half-millennium). But the historical paths and outcomes generated by this algorithm are very much open-ended, and it is this latter flexibility that makes the capitalist creorder so dynamic.” (Nitzan & Bichler, 2009, p. 307)

Acting as a universal yardstick, it conditions business processes and ultimately contributes to structuring the ever-changing prices that coordinate the capitalist order⁷² (Nitzan & Bichler, 2009, p. 307).

From prices come earnings. As Thorstein Veblen (1908a) remarked, the earning capacity of any asset is overwhelmingly dependent on the wider and ever-changing institutions of society. Such capacity depends not only on the material means of

⁷² Nitzan and Bichler explain: “In capitalism, the fundamental numerical unit is price. In principle, this unit can be assigned to anything that can be owned. [...]. Prices in Europe of the eighteenth century are readily comparable to prices in India of the twenty-first century, just as the price of health care is readily comparable to that of nuclear weapons. This uniformity enables ownership to be intricately interrelated – or ordered – and with great precision.” (2009, p. 151)

production but also on their combination with immaterial means (intangible capital) that can provide differential advantages (e.g. knowledge, shared practical experience, and technical skills). As a collective outcome, immaterial resources⁷³ such as skills and knowledge are the outcome of specific socio-historical webs of relations. Therefore, it is problematic to quantify an individual's or good's "productivity" and explain the distribution of earnings on this basis, as is often done in mainstream economics. In Veblen's view, those who are able to use private property rights to seize and hoard the tools of production from others can thus capture and control the usufruct of social productivity (Gagnon, 2007, p. 12), that is, immaterial resources produced by the community. Therefore, the value of an asset does not depend on the so-called "productivity" of means of production, but rather on how much control it offers over the community.

Nitzan and Bichler (2009) find some inspiration in Veblen's viewpoint on asset value in that, for them, capital does not reflect *economic* factors but directly reflects the power of its owners over society as a whole. In this way, the financial value of a corporation – Amazon, for example – quantifies its power, at large, over society. Therefore, Amazon's value (almost 1 trillion USD at the time of the writing), making its founder one of the wealthiest people in the world, cannot be explained solely by changes in its production processes and inputs. Amazon is highly valued because investors are confident that it has the capacity to continue shaping society and extracting some level of profit from wide-ranging social (or socio-ecological) processes, which may include, but is not limited to, the consumerist culture, government's support, the availability of (often publicly funded) infrastructure (roads, ICT technologies), the possibility of overexploiting resources, the crushing of unions (Streitfeld, 2021), consumers' confidence in online payments, or the lack of spare time that puts physical shops at a disadvantage (Peña-García et al., 2020). Similarly, what would happen to the capitalisation of the world's largest scientific publishers without restrictive copyright laws, without the "publish or perish" culture in academia, without the possibility of commodifying publicly funded

⁷³ The term "resources" is not aligned with process philosophy, as it tends to denote a fixed substance (see Section 1.4.1). However, I keep using it here for the sake of clarity. Resources, however, should be viewed as "snapshots" of ongoing processes and events.

research and hiding it behind paywalls?⁷⁴ Would financial markets still globally value these corporations in US dollars with 12 digits?

Those who turn the heterogeneous qualities of social life into single quantities are labelled here as discounters: asset managers, financial analysts, traders, and, more generally, investors, (or capitalists, owners) frequently analyse the earnings patterns and prospects of the assets they value. These actors can be viewed as contributing to a social algorithm that incessantly estimates the value of capital and contributes to the reshaping of society.

In this context, not only is the stock market the central barometer of modern capitalism, but it is also the key power process through which capitalists establish order in their world (Bichler & Nitzan, 2012). Conventionally, the stock market enables firms to raise funds. However, as Henwood (1997) and Buller (2022, pp. 105–106) explain, the stock market’s contribution to investments in productive activities is modest. In other words, the main purpose of the stock market is not to fund new activities but rather to distribute ownership claims between owners. It is “a quantitative map [that shows] the relative power of owners to shape the social process” (Bichler & Nitzan, 2015, p. 265).

Any process that affects patterns of earnings is part of capital accumulation. In this way, the scope of the processes contributing to accumulation goes far beyond the conventional borders of the economy:

“Every stream of expected income is a candidate for capitalization. And since income streams are generated by social entities, processes, organizations and institutions, we end up with capitalization discounting not the so-called sphere of economics, but potentially every aspect of society. Human life, including its social habits and its genetic code, is routinely capitalized. Institutions – from education and entertainment to religion and the law – are habitually capitalized. Voluntary social networks, urban violence, civil war and international conflict are regularly capitalized. Even the environmental future of humanity is capitalized. Nothing escapes the eyes of the discounters. If it generates expected future income, it can be capitalized, and whatever can be capitalized sooner or later is capitalized.” (Bichler et al., 2013, p. 10)

Like every process affecting expectations about earnings patterns, socio-ecological transformations can be capitalised – in the sense of *being integrated in the valuation of*

⁷⁴ On this topic, see, e.g. Larivière et al. (2015).

capital. This potential influence of any process on capitalisation implies that degrowth transformations could play a role in differential accumulation and, therefore, in the ongoing transformation of the capitalist order. Moreover, whether degrowth transformations may influence accumulation pathways intentionally or not does not necessarily make a difference, because in that respect, it is the perception of the discounters that matters.

How is capitalisation addressed in the degrowth literature? Tokic (2012) made the argument that the stock market would decline at the first hint of degrowth, subsequently leading to heightened deleveraging and deflation. This suggests that, from Tokic's perspective, actively pursuing degrowth is neither economically feasible nor practical. Yet, it is worth noting that the specific situation Tokic describes – a swift and extensive strategy harming GDP growth – may be just one particular example among various degrowth strategies (see Chapter 4 for the wide diversity of modes of transformation). In my view, this vision cannot be used to make general conclusions about the achievability of degrowth. In addition, the policy response envisaged is based on previous experience; how could it be so easily extrapolated to a radically changed world?

van Griethuysen (2010) also assigns capitalisation a substantial importance for degrowth's viability. In his view, the centrality of capitalisation is the main reason why capitalism must grow. van Griethuysen argues that the institutionalisation of property rights has ushered in a distinct economic logic, emphasising the monetary value of assets through credit relations. This system perpetuates a self-reinforcing cycle of wealth accumulation for property owners. As the property-centric economy expands, it rapidly integrates any valuable resource, leading to an unchecked growth driven by capitalisation.⁷⁵ This growth inherently discriminates against alternative economic models, with the institutional framework becoming increasingly biased towards property owners' interests. The industrial mode of development further entrenches this trajectory, making it challenging to propose and implement sustainable alternatives. For van Griethuysen (2012), regulating capitalisation is thus crucial for an integrated degrowth strategy, distinguishing between first-order processes like credit relations and second-order practices like derivatives and leveraging. In this sense, CasP adopts a more holistic

⁷⁵ The idea that credit relations create a growth imperative should be taken with caution, given more recent works in ecological economics (Cahen-Fourot, 2022; Jackson & Victor, 2015).

and power-centred focus, while van Griethuysen's analysis of capitalisation remains mostly within the boundaries of "the economy". For example, from a CasP perspective, financial instability may not be seen primarily as a driver of property expansion and growth but rather as a result of the differential accumulation of power. Speculative activities are just one way in which power is exercised and consolidated.

3.2.3 Differential capitalisation and accumulation

The potential limits of accumulation are barely perceptible, although a key idea of CasP is that what matters to capitalists is not to accumulate indefinitely, but relatively. Indeed, power emerges within society and not without, which means that power is never absolute, but always relative (Nitzan & Bichler, 2009, p. 17). The power of a capitalist cannot be measured in absolute terms; it is always compared with the power of others. A similar reasoning can be made for accumulation, which is inherently *differential*.⁷⁶ Capital is "a *differential* power claim" (Nitzan, 1998; emphasis is mine).

While the competitive nature of accumulation is also acknowledged in most orthodox and heterodox economics approaches, CasP emphasises that the most significant point of comparison is *capitalisation* (and thus power) and its accumulation. When a company grows in differential capitalisation faster than average, it shows a positive *differential accumulation*. To avoid losing differential power, capitalists need thus to beat what they perceive as *an average* in terms of accumulation – which is often described by capitalists themselves as "beating the market" (e.g. Fontinelle, 2022). They also attempt to exceed a *normal rate of return* for their capital that they deem to deserve (Nitzan & Bichler, 2009, p. 243; see also Section 3.2.4.4). A negative differential accumulation does

⁷⁶ Gilles Deleuze (1968/2011) developed a philosophical concept of "difference and repetition" which can be related to this key CasP's notion of differential. In Deleuze's thought, the differential is a concept of becoming and change. Deleuze proposes that differences themselves are generative, a source of change, rather than just results of change. While they stem from distinct fields – political economy and philosophy - there might be ways to bridge the concepts of "differential" from Deleuze and Nitzan and Bichler, considering that both are exploring assemblages of relations and how change occurs within those assemblages. In a Deleuzian sense, differential is a principle of constant change and becoming. When the differential concept is applied to the analysis of capital (as in Nitzan and Bichler's work), it stresses the importance of relative power and the ceaseless flux of power dynamics. In other words, capital, in Nitzan and Bichler's understanding, can be seen as a "differential" in a Deleuzian sense - it is always becoming, always changing, and always in a state of flux. Moreover, Deleuze's idea that difference itself is generative - creating new realities and conditions - resonates with the dynamic of differential accumulation in Nitzan and Bichler's approach. Here, capitalists are not just trying to match but to beat the average rate of return. This drive creates difference which, in turn, shapes society's transformation.

not necessarily mean that the company is “eliminated”, but that it becomes more peripheral in the dynamically created social order.

Capitalists often use benchmarks to compare themselves to the average; that is, to determine whether they are maintaining or growing their differential power:

“Large companies gauge their performance relative to listings published by periodicals such as *Fortune*, *Business Week*, *Far Eastern Economic Review*, *Euromoney* or *Forbes*; fund managers are hired and fired according to whether they exceed or fall short of their relevant benchmark; and stock performance is meaningless unless compared to market or industry indices.” (Nitzan, 1998, p. 206)

Popular indices include S&P 500 and STOXX 600, as they reflect the aggregate value of highly capitalised companies – respectively 500 headquartered in the United States and 600 in Europe (Beers, 2020; Di Muzio, 2015b, p. 64). The S&P 500 index approximates 80% of the market capitalisation of publicly listed companies headquartered in the US, whereas STOXX 600 represents approximately 90% of the capitalisation of the European stock market (Qontigo, 2022; S&P Dow Jones Indices, 2022).

The quantitative facet of differential accumulation (DA) is the rate of change of differential capitalisation (DK), whose working definition is:

$$DK = \frac{K}{K_A},$$

where K is the capitalisation of an owner’s assets and K_A denotes average capitalisation or some benchmark (e.g. S&P 500). Differential accumulation at time t DA_t is thus:

$$DA_t = \frac{DK_t - DK_{t-1}}{DK_{t-1}}$$

When DA_t is positive, it means that, at time t, the owner accumulates faster than average, or de-accumulates slower than average – they run ahead of the pack. If its value is zero, it shows that the owner keeps their relative position in the dynamically changing capitalist order. In the last case, a negative DA – whether their capital is growing or not in absolute terms – indicates that they accumulate slower – or de-accumulate faster – than the average capitalist. In other words, they lose differential power. For example, if one company grows its capitalisation by 5%, while the average company’s capitalisation rises by 8%, this company loses differential power. This means that, in times of financial downturns and recessions, it is still possible for a capitalist or a firm to differentially

accumulate by losing less differential capitalisation than average, as defined by some context-dependent benchmark.

If CasP premises hold true, the idea that growth is the “materialisation” of capital accumulation (Pineault, 2020; Schmelzer et al., 2022, p. 123), or even that “growth” is the “vulgar name” for “capital accumulation (Latouche, 2009b, p. 38), must be reconsidered. While economic growth represents the rise of market activity in *absolute* values, differential accumulation is a *distributional* process of power. Furthermore, as an indicator, GDP is inherently backward looking because it draws on past monetary exchanges. In contrast, capital reflects expectations about an uncertain future. While growth can fuel accumulation, stagnation may also improve the *differential* power of the largest capitalist groups (Nitzan & Bichler, 2014). Thus, while they are interconnected, growth and accumulation are not linearly coupled. Capital accumulation for CasP is driven by power, while growth is a potential outcome of power processes (Bichler & Nitzan, 2020a), shaping at the same time ideologies, culture, material production, and consumption.

Ecological economists have widely acknowledged that GDP growth is tightly coupled with material and energetic growth and devastating environmental impacts (Haberl et al., 2020; Parrique et al., 2019). Therefore, the degrowth movement should combat both growth and differential accumulation: growth as a manifold process of destruction of Earth’s habitability and differential accumulation as an encompassing process of power grabbing, which inhibits socio-ecological transformations.

3.2.4 Elements of capitalist power

Then, the question is: how do capital and degrowth transformations conflict? How can the latter challenge capitalist power? This section aims to develop a look at this dynamic, further exploring the elements that underpin capitalisation to identify key entry points of transformation.

Capitalisation and its underlying elements can shed light on how capitalist power is imposed and can be challenged by degrowth transformations. The modern incarnation of capitalisation can be summarised as the “discounting to present value of risk-adjusted expected future earnings” (Bichler & Nitzan, 2011, p. 6). In other words, it reflects, at the time of valuation, the price that investors are willing to pay now to receive earnings late, knowing that expected earnings could not be realised (see also Muniesa et al., 2017). Let

us examine what it means with the following formula that Nitzan and Bichler (2009, pp. 153–155; 185–209) derived from foundational models of finance:

$$K = \frac{E \times H}{\delta \times nrr}$$

In this equation, capitalisation (K) can be viewed as depending on four key elements, which offer ways to delineate the multitude of processes influencing capitalisation values. Above the line in the equation, there are *future earnings* (E), as they will eventually flow. However, no one knows their exact value *ex ante* since the future is indeterminate. Expectations about these earnings are subjective: they can be too low or too high. In this vein, investors' *hype* (H) reflects their optimism or pessimism regarding future earnings at the time of valuation. Thus, E × H denotes the stream of *expected earnings* in perpetuity. Underneath the line in the equation the expected earnings are adjusted for *risk* and *present value*. $r \times \delta$ relates to capitalists' confidence in their expectations of future earnings. δ denotes the risk factor related to the perceived risk of earnings generated by a specific asset. nrr is the normal rate of return (i.e. what capitalists consider *the norm* for the minimum rate of accumulation). It is used to estimate the value of the risk-adjusted expected stream of earnings as of the valuation date.

Note that these symbols do not represent fixed substances, and each of them is an ongoing manifestation of power processes. Therefore, future earnings, hype, risk, and the normal rate of return suggest ways in which degrowth transformations can challenge capitalist power. The remainder of this section clarifies each element and discusses them in relation to degrowth.

3.2.4.1 Future earnings

In the long term, future earnings are typically the most crucial factor for capitalisation, as Nitzan and Bichler (2009, pp. 186–187) empirically show for the US. Political economists usually acknowledge that capitalist earnings are intimately tied to markets and the exchange of commodities. Similarly, Nitzan and Bichler (2009) argue that “[w]ithout a market, there can be no commodification, and without commodification there can be no capitalization, no accumulation and no capitalism” (p. 307). Indeed, in a society dominated by capitalist markets, all income emerges from the sale of something through money transactions (Polanyi, 1944/2001) and necessitates a price system. However, selling necessarily implies exercising control over social flows. More particularly, earnings come into being through commodification (i.e. the extension of the scope of

pecuniary exchanges), the (partial) transformation of some firms' income into owners' earnings, as opposed to what is given to workers, and most importantly, control over these processes to ensure their implementation and continuation in the future (Di Muzio, 2015a, p. 62). In comparison with other political economy perspectives, Nitzan and Bichler emphasise two paths for generating differential earnings: by acquiring a more central position in society through mergers and acquisitions⁷⁷ (at the industry, national, and then global level), and by raising prices more than others (see Section 3.4.2).

Degrowth transformations, whether based on non-capitalist practices, institutional reforms, or oppositional actions, can threaten future earnings in multiple ways. They can impact corporations' earnings streams, particularly for those with adverse environmental and well-being effects. Degrowth advocates for a decrease in market-based activities and a reduction in pecuniary exchanges through markets (decommodification) to democratise society (Fournier, 2008; Gómez-Baggethun, 2014). Furthermore, it encourages a shift from for-profit to not-for-profit business models, thus limiting the earnings capacity of differential accumulators. Finally, degrowth seeks to promote a fair distribution of economic, social, and environmental benefits and burdens across generations (Demaria et al., 2013). Redistributive measures, such as income and wealth caps (Buch-Hansen & Koch, 2019), if implemented, could potentially jeopardise the conversion of a firm's income into owners' earnings.

However, if CasP's claims are correct, these reductions in owners' earnings streams, by taming their control of markets and redistributing profits, are only one side of the picture. Degrowth transformations should fight mergers and acquisitions more frontally as well as price inflation, which are two tools for powerful capitalist groups to further augment their differential power over society. These are two areas that have been neglected by degrowth research thus far (see Fitzpatrick et al., 2022).

3.2.4.2 Hype

Although discounters constantly analyse earnings patterns to estimate the expected streams of gains they can extract from specific assets, nobody can predict the actual future accurately. In other words, they might be either overly optimistic or pessimistic

⁷⁷ The neo-Marxist school *Monopoly Capital* (Baran & Sweezy, 1966) rightly emphasised the prime role of large corporations and monopolies before them. While this perspective has influenced CasP, it has however primarily focused on the economic aspects of monopolies and their impact on the capitalist system, while CasP adopts a broader view and emphasis on power (see Nitzan & Bichler, 2009, p. 53).

about the future earnings generated. The *hype* element captures this phenomenon as the ratio between expected and actual future profits.

However, hype is more than a ratio because it reflects the power processes through which capitalists shape ideas about the future. Although future expectations are embedded within current materiality (Bichler & Nitzan, 2018), hype highlights the role of narratives and ideas about the future in capitalist dynamics.⁷⁸ Beyond material transformations, capitalists' perception of their power is crucial, and this perception is a consequence of power processes. To some extent, discursive practices and narratives can contribute to shaping the balance of power within the capitalist order. In this vein, diverse tactics allow manipulation and/or profit taking from (differential) hype in their interests (Putniņš, 2012). For instance, groups of insiders can hold exclusive information about assets or spread rumours (Van Bommel, 2003). However, in capitalism, hype may be much wider; it is systemic, as Di Liberto (2022) argues: Boosting confidence in future earnings on a large scale is instrumental because it “eases social tensions by funnelling them towards innocuous (for the powerful) activities” (Di Liberto, 2022, p. 7). Maintaining the illusion of the possibility and desirability of perpetual economic growth could be considered a way of feeding systemic hype by creating the false impression that profits can be generated indefinitely.

In this context, degrowth transformations can hamper capitalists' confidence by altering their subjective assessment of the state of the world and the associated earnings flows. The mere belief that degrowth reforms will negatively impact future earnings, even if this does not turn out to be true, may even cause panic, as imagined by Tokic (2012). However, the differential nature of capitalisation and thus of hype should be emphasised. Not all assets are devalued equally. For example, Ramelli et al. (2021) show that the first wave of global climate strikes in 2019 affected the financial value of European corporations identified as “carbon-intensive”. This situation has led financial analysts to revise their long-term earnings projections downward for the stocks of these firms. For the authors, the strikes revived investors' awareness of the influence of climate issues on their financial returns: As they argue, the financial market “takes into account firms' environmental performance anticipating a possible reduction in future cash flows,

⁷⁸ This is similarly emphasised by Beckert (2013), who considers *fictional expectations* as key drivers of capitalism.

tightening of environmental regulation or increasing public attention” (Ramelli et al., 2021, p. 2). From a CasP perspective, this means that discounters have acknowledged a loss in these firms’ differential power in the face of climate activism.

Conversely, discounters can remain (over)confident about capitalist groups’ ability to absorb the rise of degrowth practices, protests, and policies. For instance, some business observers believe that degrowth may open new business opportunities and create differential gains:

“Some companies and industries will certainly be disrupted, but others that are sufficiently prepared for such transitions will handily outmanoeuvre their competitors. For instance, Flygskam has been a boom for train travel, bolstered by a social media movement called Tågskryt (‘train brag’). Meanwhile reduced meat consumption has been accompanied by an explosion in meat substitutes that produce one tenth of the greenhouse gases compared to the real thing. Accordingly, degrowth reshuffles competitive dynamics within and across industries and, despite what many corporate leaders assume, offers new bases for competitive advantage.” (Roulet & Bothello, 2020)

Might socio-ecological transformations along the degrowth paradigm provide advantages to some capitalists, or should – and must – degrowth *scare* the business world as a whole, as Nesterova et al. (2020) respond? In any case, capitalists’ confidence in the capacity of capitalist groups to cope with socio-ecological transformations would boost related hype and capitalisation levels, all other things being equal. Overall, this illustrates that degrowth transformations can directly challenge capitalist power not only by altering the materiality of profits, but also by shaping the beliefs of capitalists about the future.

3.2.4.3 Risk

Estimating the flow of future earnings related to an asset is only part of the valuation process that capitalists undertake. The asset must be given a price *in the present* (i.e. it must be *discounted*). CasP theorists break r into a risk coefficient (δ) and a normal rate of return (nrr). Although capitalist power can sometimes be strong enough to give capitalists confidence in their strategies and future profits, their grip on society is often shaky, and future predictions are more uncertain. When capitalists are fully confident, $\delta = 1$. This is typically the case for government bonds, at least in countries with a stable government, whose risk is contained in the reliability of government operations. Otherwise, δ is greater than 1, and it increases as confidence decreases. This means that riskier assets lose their

capitalisation value. Once capitalisation figures become more volatile, confidence in predictions is loosened and perceived risks are uplifted (Pflueger et al., 2020).

Degrowth transformations can affect how capitalists perceive risk in relation to individual or wide-ranging assets. This is especially true when these transformations are a source of uncertainty and diminish the capacity of capitalists to project in the future. For example, Lewis et al. (2017) examine the impact on capitalisation of a powerful Tasmanian woodchip processor, Gunns, on environmental activism. Activists opposed their project of creating a new pulp mill that required logging of an old forest. This resistance to Gunns' attempt led discounters to reconsider their financial riskiness:

“The managed funds investing in Gunns were aware of the environmentalist opposition to Gunns's old forest logging well before 2004 and had apparently discounted the risk that it posed to Gunns's business. Environmental activism had, though, by 2004 become more international. In particular, influential US commentators were commenting unfavourably on Gunns's activities and pressure was being brought to bear by environmentalist groups on customers, especially in Japan (Manning 2011). Consequently, it is quite likely that the announcement of a very large and costly project, requiring investment at levels that would at least double the net asset base of the company, and accompanied by much negative propaganda about its likely true cost and economic value, followed by a highly publicised lawsuit against opponents seen by many as unfair, *might cause shareholders to reassess the riskiness in the future value of Gunns's shares.*” (p. 471, emphasis added).

The authors showed that activists' opposition played a significant role in decreasing the value of Gunns in the years before its ultimate failure. This study demonstrates that oppositional activism, such as that undertaken by certain degrowth proponents (Demaria et al., 2013), can significantly impact a company's long-term capitalisation and the likelihood of its ongoing survival.

Overall, degrowth transformations can challenge capitalist power by increasing the perceived risk associated with investments and reducing capitalists' confidence in their future earnings predictions. Remarkably, this presents a paradox: many within the degrowth movement envision a degrowth transition as a planned process (e.g. Durand et al., 2023; Parrique, 2022; Schmelzer et al., 2022). The processes involved and their impacts on patterns of earnings may be predictable, and thus less risky and challenging

for capitalist power. In contrast, potential uncertainty about the future caused by swift degrowth transformations may be more effective in undermining capitalist power.

3.2.4.4 Normal rate of return

For centuries before the primacy of capitalism, owners were primarily seeking to preserve their properties rather than generate profit and accumulate. Under capitalism, profit-making has been viewed as a natural right for owners (Nitzan, 1998). Although beating the market is difficult for most investors, some minimum profit level should be attainable, which Nitzan and Bichler (2009, p. 243) label the *normal rate of return*. This rate does not follow mechanical rules, it formed through a social process, depending on the context:

“With the gradual penetration of capitalist institutions, owners have come to believe that the flow of profit is a natural, orderly phenomenon. As such, profit is seen as having a more or less predetermined mean growth rate and a dispersion that varies with circumstances (expressed by the standard deviation from this mean).” (Nitzan & Bichler, 2009, p. 243)

Typically, the normal rate of return reflects the usual income stream an average investor can expect from *low-risk* assets, mostly government bonds. In this sense, it somehow reveals the confidence of investors in the continuation of capital accumulation, including its backing by governments. For Nitzan and Bichler (2009), this widespread belief of capitalists “helps unite the various elites into a cohesive, if not seamless, ruling class of absentee owners, making opposition all the more difficult” (p. 270). It should be noted that, as a factor of cohesion widely shared among owners, the normal rate of return is not inherently differential, contrary to the other three elements.

Degrowth transformations can thus affect capitalist power by challenging the “natural right” of investors to earn profits. The compatibility between profit-making and sustainability is often criticised in the degrowth and growth-critical literature (e.g. Hinton, 2020; Kallis et al., 2012). In this context, the very principle of capitalisation driving capitalism is called into question.

In general, the elements of the capitalisation formula, future earnings, hype, risk, and the normal rate of return underscore ways of challenging capitalist power for degrowth transformations. However, which capitalists should be challenged? This power is far from being uniformly distributed, as emphasised in the next section.

3.2.5 Element of dynamics I: Interplay between capitalisation and degrowth transformations

In sum, the capitalist mode of power is intimately connected to and has an impact on socio-ecological processes. Conventional views tend to presume that capitalism is “short-sighted”, and that environmental harm is a “by-product” of the accumulation of capital. CasP, on the other hand, posits that capitalism is a broader system of power relations, where profit-seeking and environmental harms are interconnected manifestations of dynamics of control of society (including human-nature relations) more broadly. Specifically, if dominant capitalists – those who hold the most power over society, see Section 3.3.1 – expect a differential diminution in terms of future earnings due to socio-ecological transformations, they are likely to use their vast capacities to hinder that change.

To clarify this process in the context of degrowth, this section offers a CLD synthesising the relations between degrowth transformations and the (differential) capitalisation of power and its basic elements: future earnings, hype, risk, the normal rate of return. This dynamic establishes a simple element of dynamics for the theory of change in degrowth against capital accumulation.

Recall that degrowth transformations refer to wide-ranging processes of socio-ecological change in line with degrowth principles, ranging from building grassroots alternatives to making institutional reforms and opposing capitalist institutions⁷⁹ and hegemony (Barlow et al., 2022; Demaria et al., 2013; Schmelzer et al., 2022; see Chapter 4). According to the circumstances, when these processes unfold, they may influence capitalisation and thus differential accumulation patterns. The process of capitalisation translates degrowth transformations and other socio-ecological processes into the quantitative language of capitalists. This first element of dynamics attempts to capture these processes in Figure 3.

⁷⁹ Note that when I use the term “institution” within the context of this thesis I do not intend to imply static or fixed entities. Following process philosophy, I place emphasis on the dynamic, ever-changing, and interconnected nature of institutions. Institutions can be understood as complex networks of practices that, over time, become routinised and taken for granted by members of a society (see Section 4.2).

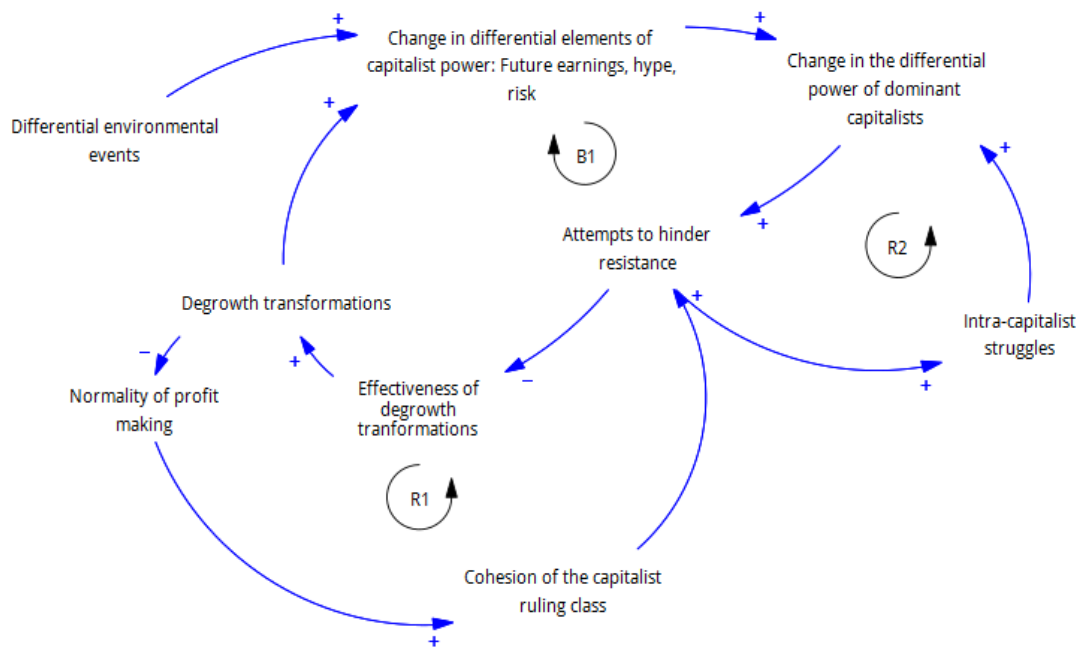


Figure 6. Element of dynamics I: Interplay between capitalisation and degrowth transformations

In this manner, degrowth transformations may confront capitalist power by undermining these groups' confidence in their ability to shape society against resistance. This is achieved by diminishing expectations on future earnings. While targeting actual future earnings should contribute to this task, the perception about these future earnings (hype) is also important. Furthermore, degrowth transformations may challenge the capitalist ruling class by obstructing faith in predicting the future (increasing risk). In parallel, and possibly in reaction, dominant capitalists tentatively reshape society and the socio-ecological world more broadly to their advantage against multiple oppositions, including from other capitalist coalitions; in this process, they may attempt to reduce the effectiveness of degrowth transformations (loop B1) – while acknowledging that the intensity and effectiveness of degrowth transformations depend on a wider set of processes, including cultural, political, economic, social. Degrowth transformations may also contribute to questioning the fundamental principle of capitalisation and profit-making, reflected by the normal rate of return (see Section 3.2.4.4). This could lead to the cohesion of the capitalist ruling class being impeded, which influences positively the ability of capitalist coalitions to hinder transformations (R1).

While degrowth transformations may purposively undermine or shift capitalist power, environmental events, e.g. due to exceeding environmental limits, can also produce differential impacts on capitalist power (see Section 3.2.1), and also shape the trajectory of capitalism. Considered here as an external variable, they include determinants addressed in Element of dynamics III (see Section 3.4.3) and the assembled CLD (see Section 5.2.1).

Overall, the process described can lead to either exponential progress (increasing degrowth transformations) or decline (greater capitalist power), depending on the initial conditions and the intensity of the relationships between the variables: the relative ability of degrowth transformations to challenge the differential power of capitalist groups, and their relative capacity to hinder opposition. Furthermore, R2 emphasises that capitalism is vastly shaped by *intra*-capitalist struggles, which may influence the concentration of power within the capitalist world.

The next section further explores the dynamics underlying differential accumulation by focussing first on *who* the actors involved are and *how* they operate, including how resistance can be tentatively hindered.

3.3 Differential accumulation: Who and how?

3.3.1 Dominant capital

First, it should be remarked that the dynamics of differential accumulation are not driven by a homogeneous block of owners. A crucial part of them are people whom Veblen (1904/2005) calls “absentee owners”, who mostly own to own more, i.e. to accumulate. With a wide range of available financial instruments for selling and buying income-generating assets, these owners need not be involved in the underlying productive activities. They can focus solely on the quantitative performances of their assets – typically equities and bonds issued by corporations and governments, pension funds and other financial assets.

However, the agency of isolated owners is limited. Capitalists must rely on collective structures to stay in the race of differential accumulation. Focussing on coalitions of capitalists is thus necessary to grasp the dynamics of capital. The significant coalitions are typically formed as corporations (i.e. large companies taking a legal form that allows their owners to act as single entities in perpetuity; Drucker, 1946/1993). Indeed, small firms can play a political role (Hilmersson, 2015; Westman et al., 2020),

but they have much lower agentic capacities than large corporations have due to their highly fragmented nature (Bichler & Nitzan, 2021b). The larger their coalitions are, the more capitalists can directly and indirectly control strategic aspects of society together⁸⁰.

CasP focusses on the role of *dominant capital*, that Nitzan and Bichler (2009) define as “the leading corporations and key government organs at the epicentre of the [differential accumulation] process” (p. 17). Government organs typically consist of key public officials, politicians, and entities from the executive, legislative, and judicial branches of governments and international organisations; more generally, they may be understood as any institutions of society with governance capacity. This does not mean that corporations and governments form a unified block but rather that differential accumulation cannot be understood without an array of ever-evolving relationships between these entities (see in Section 3.3.5.1):

“... the universalizing nature of this power process suggests that this dominant capital comprises corporations as well as other key power organizations and institutions of society with which they are intertwined. It is impossible to think of JPMorgan Chase without the Fed, of ExxonMobil and Lockheed Martin without the Pentagon and the State Department, of the Japanese keiretsu and Korean chaebol without their respective governments – and of all these entities without the international organizations that connect and link them. These organizations and the people who own and control them constitute not a mechanical collection of distinct ‘economic’, ‘political’ and ‘cultural’ components, but a single hologram of capitalized power” (Debailleul et al., 2016, p. 10).

⁸⁰ Because absentee owners usually seek to at least maintain (or even better, increase) their relative power, the universe of ownership experiences a “strong gravitational force” (Nitzan & Bichler, 2009, p. 18). Smaller groups tend to either lose value or join larger coalitions (e.g. through mergers and acquisitions [M&As]; see Section 3.4.2.3). For this reason, Nitzan and Bichler argue, “Any analysis of contemporary capitalism must have the corporation as a central building block” (2009, p. 314). As Mikler (2018) also shows, large corporations are not solely interested in profit-making: They also want to influence or change the policies of governments, as well as rule on their own (see Section 3.3.5). Bigger groups of capitalists can deploy more power together, especially by developing tighter relationships with government entities: “It causes them to join, coalesce and fuse into ever larger units. [...] These constellations constitute what we call *dominant capital*” (Nitzan & Bichler, 2009, p. 18 my emphasis).

Table 4. Top 25 global companies by market capitalisation (March 2023)

Source: PwC (2023)

Company	Headquarters location	Main sector	Market capitalisation (billion USD)
Apple Inc	United States	Information Technology	2,609
Microsoft Corporation	United States	Information Technology	2,146
Saudi Arabian Oil Company (Saudi Amraco)	Saudi Arabia	Energy	1,893
Alphabet Inc (Google)	United States	Communication Services	1,330
Amazon.com Inc	United States	Consumer Discretionary	1,058
NVIDIA Corporation	United States	Information Technology	685
Berkshire Hathaway Inc.	United States	Financials	676
Tesla Inc	United States	Consumer Discretionary	659
Meta Platforms (Facebook)	United States	Communication Services	550
Visa Inc	United States	Financials	464
Tencent Holdings Limited	China	Communication Services	462
LVMH Moët Hennessy - Louis Vuitton, Société Européenne	France	Consumer Discretionary	460
Taiwan Semiconductor Manufacturing Company Limited	Taiwan	Information Technology	453
Exxon Mobil Corporation	United States	Energy	446
UnitedHealth Group Incorporated	United States	Health Care	441
Johnson & Johnson	United States	Health Care	405
Walmart Inc	United States	Consumer Staples	398
JPMorgan Chase & Co.	United States	Financials	384
Novo Nordisk A/S	Denmark	Health Care	356
The Procter & Gamble Company	United States	Consumer Staples	351
Mastercard Inc	United States	Financials	346
Samsung Electronics Co., Ltd.	South Korea	Information Technology	327
Nestlé S.A.	Switzerland	Consumer Staples	326
Chevron Corporation	United States	Energy	311

Company	Headquarters location	Main sector	Market capitalisation (billion USD)
Eli Lilly and Company	United States	Health Care	310

The ongoing formation of dominant capital is central to differential accumulation. Empirically, leading corporate-government coalitions can be identified at the centre of diverse parts of society: an industry, a country, a set of states, and ultimately the whole capitalist world (Bichler & Nitzan, 2021b).⁸¹ It is a dynamic category with flexible boundaries. For instance, a researcher can choose to empirically focus on the global top 100, 500, or top 0.01% of firms in some category (Bichler & Nitzan, 2012), or in a country, depending on the scope of investigation. Table 4 shows the top 25 global companies by way of illustration. While this overview is limited to the most powerful entities, it is remarkable that an overwhelming proportion of these companies are headquartered in the US – while they all control activities globally – and that sectors such as information technology, communication services, consumer staples, energy, financial services and healthcare are well represented. Dominant capital is a continually changing collection of coalitions – hereafter referred to as “dominant capital groups” – ruling together, despite their internal conflicts, over society:

“This group is subject to intra-distributional struggles, exits and entries, organizational rearrangements, mergers and divestitures. But overall, it is probably the most cohesive and often the only self-aware class in society. The members of this group, its owners and controllers are connected and fused through numerous ownership, business, cultural and sometimes family ties; they are tightly linked to key government and international organs through a complex web of regulations, policies, contracts, revolving doors and a shared worldview; they impose, reinforce and obey the same encompassing logic of forward-looking capitalization and the institutions that protect it; and their accumulation trajectories often show close similarities.” (Bichler & Nitzan, 2021b)

⁸¹ Other scholars focus on the key role of asset managers, competing with each other, in the course of global capitalism (Braun, 2020; Buller, 2022). Contrastingly, the CasP perspective emphasises more the role of dominant capital, more broadly, composed of corporations, asset funds and other institutional investors as part of the same “ecosystem” (my term). This ecosystem is partially competing, partially aligning. Importantly, the power of these entities cannot be separated from their relations with key officials, policymakers and government organs more generally. Regardless of its composition, which is continuously transformed, it is its growth *as a group* relative to others that is significant for the development of capitalism (Nitzan & Bichler, 2009, p. 316).

For instance, the differential net profits of Top 500 and Top 100 listed US firms between 1954 and 2018, i.e. their average net profit divided by the average net profit of all US firms, have dramatically increased. In 1954, these firms earned on average respectively 484 and 1,784 times more profits than the average US firm. Six decades later, in 2018, these figures were estimated at 6,752 (+1,294%) and 22,350 (+1,153%), respectively (Bichler & Nitzan, 2021b). This evolution reflects the growing differential power of dominant capital groups compared to the whole universe of US firms.

If a small number of corporate-government coalitions tend to concentrate power over societal reproduction, the rest of society is likely to have less capacity to satisfy its well-being. Furthermore, the profits made by these dominant capital groups have contributed to the creation of a class of ultra-rich individual owners whose ostentatious lifestyles are extremely destructive to the environment (Di Muzio, 2015b; Kempf, 2007). From this perspective, dominant capital groups hold crucial importance in the possibilities of degrowth pathways. However, the degrowth literature has thus far insufficiently emphasised the significance of pivotal corporate actors and their role as influential adversaries to socio-ecological transformations (Hickel et al., 2022). In the limited literature on degrowth and corporations, some have highlighted the problem of corporations for democracy (Johanisova & Wolf, 2012; Speth, 2012), while Hankammer et al. (2020) see, nonetheless, a potential for “benefit corporations” to align with degrowth principles. Chertkovskaya and Paulsson (2021), taking a Marxian view, clearly identify the necessity of transforming productive forces to move away from corporate violence.

Numerous questions remain open or have barely been touched on, such as how leading corporations impede degrowth transformations and how they intertwine with government organs to shape human societies and nature. In conclusion, the role of corporations within the degrowth discourse has been notably under-theorised to date. The power exerted by dominant capital can provoke resistance in various forms as society pushes back against the increasing concentration of wealth and influence. Understanding these resistance movements is essential to exploring the possibilities for degrowth and socio-ecological transformations in the face of dominant capital.

3.3.2 Resistance

According to Nitzan and Bichler (2009), the capitalist mode of power has at its centre a clash between power and creativity: “Capitalists constantly try to force life into a box, to harness creativity, to convert quality into quantity. This is the nature of their power” (p. 313). This conversion is speculative because capitalist power is a constantly contested process. Following CasP analysis, it provokes resistance from those on whom it is imposed, and this resistance tends to increase along with the power being exercised. This means that the more power is used, the more resistance it is likely to encounter, which makes it harder to increase power even further (Bichler & Nitzan, 2012, 2016). Additionally, capitalist power tends to self-spread. According to Ulf Martin (2019), capitalists attempt to “rationalise” society through the capitalisation of power – the conversion of infinite socio-ecological processes in a single number. For Martin, this process of rationalisation often generates resistance, which can lead to further capitalisation to control the perceived “irrationality” of this resistance.⁸² The exertion of power by dominant groups provokes resistance from those on whom it is imposed, and this resistance tends to be stronger along with the power being exercised. This process extends as this self-propagation crosses borders and continues in an ongoing cycle, resulting in a never-ending “autocatalytic sprawl”:

“... those on whom power is imposed tend to resist it – though their resistance is usually internal to the power struggle itself. In most cases, their resistance fails, and even when it succeeds the end result usually is not the abolition of power, but a new form of power. It appears that once power-for-the-sake-of-power gets a hold of society, it becomes self-propelling, difficult to stop and seemingly impossible to eliminate.” (Bichler et al., 2017, p. 20)

According to Bichler and Nitzan (2020a), the resistance – when organised by humans – can take two main forms: it can be *power-replacing* or *power-negating*. Power-replacing resistance “is internal to the power struggle itself” (p. 37) meaning that it is the opposition from other entities seeking to impose their own power. The top-down imposition of greener technologies and ecological taxes, if they undermine the power of

⁸² Although in this context, the focus is on the viewpoint of capitalist rulers, this idea has similarities with James C. Scott’s (1999) critique of state: “The utopian, immanent, and continually frustrated goal of the modern state is to reduce the chaotic, disorderly, constantly changing social reality beneath it to something more closely resembling the administrative grid of its observations.” (p. 82)

some dominant capital groups, could then be seen as power-replacing resistance. The second form, *power-negating* resistance, is subversive and arises from a desire to reject hierarchy altogether in favour of autonomy and cooperation.⁸³ Such actions may include: joining or creating democratically-controlled, not-for-profit cooperatives (Anderson et al., 2014; Bennett & Lemelin, 2013); supporting the sphere of public services; supporting public ownership and control of industries; advocating for stronger regulations and laws against monopolies, which can help to prevent large corporations from gaining too much power and influence; participating in activism against corporations (Hatte & Koenig, 2020; Yue et al., 2013); or encouraging students worldwide to strike from school to demand stronger climate policies from their governments.

Finally, although considered separately here, power-replacing and power-negating resistance are two types of opposition that should be considered as at the opposite ends of a continuum – or possibly multiple continuums. For instance, on the one hand, consumers’ food cooperatives can offer spaces of autonomy for their members sheltered from giant corporations at the centre of the food system (Pleyers, 2017) – in this sense, they are *power-negating*. On the other hand, they may continue to develop some form of hierarchical control over their suppliers – and are thus also, to some extent, *power-replacing* (see e.g. Lohest et al., 2019; Vastenaekels & Pelenc, 2020).

The next two sections explore the ways dominant capital shapes and reshapes society, exerts power, in the face of resistance, by respectively introducing Veblen’s dialectic between *business* and *industry*, and the concept of *strategic sabotage*.

3.3.3 Shifting the focus from productivity to power

“In practice nobody cares whether work is useful or useless, productive or parasitic; the sole thing demanded is that it shall be profitable.”

— George Orwell (1933/2010, p. 164)

Conventional thinking on capital accumulation typically asserts that capital owners need to increase the productivity of their processes, particularly through technological

⁸³ This is similar to the negation of what process philosophers call “unilateral power”, which involves coercion, and the promotion of “relational power”, which involves relations of trust, “giving and receiving, influencing and being influenced, producing an effect and undergoing an effect” (Loomer, 1976).

innovation, to be competitive and maximise profits. CasP emphasises that innovation might generate differential profits *only if* competitors cannot benefit equally from the process, in other words, only if the innovators can keep innovations for themselves and deprive competitors of their outcomes. Social and legal institutions such as intellectual property, consumer lock-in and law enforcement are necessary to *limit* the capacity of other actors to benefit from innovation and secure differential earnings. Therefore, profits take their source not only in production, but also importantly in a wide range of societal institutions, including those that prevent, restrict, exclude or disable. Institutional changes affecting patterns of earnings are not anecdotal *distortions* or *imperfections* of a supposedly competitive market, but *necessary* for the generation of earnings.⁸⁴

Consequently, as many political economists have already argued, the idea of a *self-regulating market*, which assumes that economic forces naturally balance each other, looks more like a mirage than a meaningful notion to describe reality. Karl Polanyi (1944/2001) argues that indeed this is an ideal, a myth: “Power and compulsion are a part of that reality [of society] ; an ideal that would ban them from society must be invalid” (p. 267). For him, the processes underlying production and profit-making have never truly been self-regulating, and they cannot be well understood separately from the institutions in which they are embedded. The political scientist Steven K. Vogel (2018) even shows that markets that are often considered the freest or the most liberalised tend in fact to be heavily regulated.

From this perspective, the dynamics of capitalism are better understood by looking at the powerful coalitions that struggle to shape the world, rather than focussing rather narrowly on production and consumption. According to Thorstein Veblen (1921/2001b), investors – the *absentee owners* – should not be primarily viewed as *creators*, but rather as *predators* of the creativity of society.

⁸⁴ In this sense, CasP’s differential accumulation significantly departs from Schumpeter’s (1942/2008) concept of “creative destruction” which describes how new innovations lead to the demise of older industries, emphasising the importance of innovation to economic growth and the inherent dynamism of capitalism. Nitzan and Bichler, on the other hand, argue that capital represents more than just material productivity. They argue that capitalists seek to outperform their competitors, placing greater emphasis on relative growth in capitalisation than absolute growth. Both theories challenge conventional economic perspectives and highlight the inherent change and dynamism of capitalism. Nitzan and Bichler, in contrast to Schumpeter, emphasise the power dynamics involved in capital accumulation. Schumpeter views capitalism’s disruptions as a necessary force for progress, whereas Nitzan and Bichler emphasise the potential negative consequences of capitalists seeking relative advantage.

While observing the rise of corporations and finance at the beginning of the 20th century, Veblen (1904/2005) contended that modern technical culture has been progressively supplanted by the culture of profit – productive know-how has been subordinated to business techniques. To theorise this dynamic, he introduced the concepts of *industry* and *business* as dialectically intertwined forces that are shaping the capitalist society. For Veblen, industry is the sphere of continuous human action, creativity, and production driven by purpose, through coordination and integration. It assumes that without vested interests, society is more inclined to pursue collective well-being, as in degrowth visions (Helne & Hirvilammi, 2019) – rather than acting for the sake of material growth.⁸⁵ However, within capitalism, industry is a metaphor rather than an entity that exists independently, and is always in dialectical tension with business, the realm of power and finance – which is the focus of CasP – where businesspeople do not produce anything themselves but seek to increase their pecuniary earnings through the perturbation and control of industry.⁸⁶

This means that capitalist owners do not have an automatic incentive to make their owned firms more “productive” or “efficient”. Instead, profits always originate from the *hindrance* of the *relative ability* of others to earn money – such as workers and other capitalists. He empirically observed indeed that businessmen and women were not really concerned by the establishment of a *perfectly competitive* and *efficient* market, as in the ideal world theorised by neoclassical economists. In other words, for Veblen, an investor’s right to make a profit is a matter of coercion: “The whole case has some analogy with the phenomena of blackmail, ransom and any similar enterprise that aims to get something for nothing” (Veblen, 1921/2001b, p. 54). This is in line with a more recent claim from political scientists on corporations, such as John Mikler: “To the extent that

⁸⁵ In my view, the concept of industry is useful to highlight the concept of business and its mainly predatory/negating (rather than innovative/productive) logic, but it is not itself central. Importantly, it should not obfuscate other power relations that occur within society also outside the conflict between capitalist rulers and those with less power – for example, gender oppression, racism, sexual orientation discrimination, and any forms of rejection, hate or violence. It should be recalled that if capital is power, not all power is capital.

⁸⁶ Note that the dichotomy between businessmen/women and industry is different from the Marxian divide between capitalists and workers. Marx theorised the struggle between capitalists and workers following a single logic based on the labour theory of value. Meanwhile, Veblen saw, in one regard, a business world of control and, in the other regard, a world of creativity, governed by different logics. In this sense, their dialectical interactions cannot be understood with laws of motion based on a unique unit of value (Nitzan & Bichler, 2009, p. 221).

markets exist, corporations make and control them rather more than they compete in them” (2018, p. 38).

3.3.4 Strategic sabotage

Veblen (1921/2001a) coined the term *sabotage* to refer to the multiple ways business prevents, restricts, excludes, or disables industry to secure their differential gains – a “conscientious withdrawal of efficiency” (p. 43):

“‘Sabotage’ is a derivative of ‘sabot,’ which is French for a wooden shoe. It means going slow, with a dragging, clumsy movement, such as that manner of footgear may be expected to bring on. So it has come to describe any manoeuvre of slowing-down, inefficiency, bungling, obstruction.” (p. 4).

Diverging from conventional economics, Thorstein Veblen empirically studied congressional committee reports from the latter part of the 19th century to the beginning of the 20th to study the predatory practices of American businesses in the late nineteenth and early twentieth centuries. He identified the businessman, not the consumer or capitalist, as the central figure in contemporary capitalism, emphasising their expertise in trading property rights as opposed to production or management. Veblen coined the term “sabotage” to describe the legal strategies employed by businessmen to gain an advantage, such as limiting supply to increase prices. Despite its initial association with labour unions, Veblen used the term “sabotage” to illustrate how industrial leaders manipulated property laws to ensure market withdrawal. He argued that while sabotage frequently resulted in innovations and efficiencies, these were not inherently beneficial to society because they were primarily used to outcompete competitors (Nesvetailova & Palan, 2013).

CasP uses this concept more broadly, referring to attempts to *control* and *shape* society. The concept of sabotage, or *strategic sabotage*, is essential in CasP because it emphasises that capital accumulation is not a process resulting solely from market forces or productivity (supposedly influenced by and converted into political power), but rather from a deliberate and active exercise of power in all areas.⁸⁷ In this view, the socio-

⁸⁷ This perspective exhibits certain similarities with Schumpeter's concept of creative destruction (see Section 2.2.1), yet its primary distinguishing feature lies in its fundamental oppositions. Although both concepts acknowledge the inherent dynamism and power dynamics within capitalism (viewed as an *economic system* for Schumpeter, a *social order* for Nitzan and Bichler), they differ in their perspectives regarding the origins and consequences of these dynamics. Schumpeter's concept of creative destruction primarily focuses on the transformative potential of innovation, highlighting its ability to disrupt existing

environmental harms of capitalism are not the by-products of capital accumulation but a conscious outcome shaped by dominant capital groups to limit the capacities of society to thrive as part of nature, and thereby maintain their relative control (Nitzan & Bichler, 2019). Whereas Veblen's concept of sabotage mainly focusses on the limitation of the *pace* of "industry" (see Section 3.3.3) by the business world to extract profits, its *direction* is as much (if not more) important for Nitzan and Bichler (2009, p. 235) and, in my view, for degrowth. Following their more general interpretation of the concept of strategic sabotage, they explain:

"In order for power to successfully harness, contain and, if necessary, crush resistance, the powerful must constantly restrict, limit and inhibit the autonomy of those with less or no power. Moreover, [capitalists] must do so strategically: applying too little sabotage might be insufficient to sustain their power, while inflicting too much can trigger revolt or, worse still, decimate the very fabric of society they seek to control." (Bichler & Nitzan, 2020a, p. 2)

Sabotage puts on the same footing the so-called "economic" and "non-economic" power processes – both can lead to increased capitalisation and differential accumulation:

"[M]ilitary expenditures, the legal system, financial intermediation, bureaucracies, advertising, propaganda and religious organizations generate capitalist income, directly or indirectly [...]. Viewed from the perspective of capitalists, the key role of these activities is to bolster hierarchical power; and insofar as this bolstering translates into higher capitalized earnings, the activities that generate these higher earnings qualify as sound investments. Indeed, without these hierarchical investments there would probably be no accumulation of capital as power in the first place." (Bichler & Nitzan, 2020a, p. 63)

In other words, this concept calls into question the conventional wisdom that capital accumulation is merely a byproduct of market dynamics or productivity. Instead, it contends that capital accumulation is a deliberate outcome designed by dominant capital groups to limit society's ability to thrive in harmony with nature. This ensures that they maintain their dominance and control. To do so, sabotage has to pervade various societal institutions like "work" and "money". The privatisation and the capitalisation of money

economic "structures". On the other hand, Nitzan and Bichler's notion of sabotage places greater emphasis on the strategic manoeuvres employed by dominant capital groups to uphold or strengthen their relative power within the system.

creation can be indeed considered as important processes of sabotage (Di Muzio, 2021). In this way, sabotage is more effective with a high degree of enfoldment between firms and government organs, highlighted in Section 3.3.1, but potentially any institutions and relations of power may be part of it.

CasP scholarship has shown many ways in which dominant capital groups practice sabotage by influencing law, shaping cultural norms and using any other social, political, and symbolic means. For an ample list of references, see Bichler and Nitzan (2020a, p. 8) and Nitzan and Bichler (2018). In similar ways, other scholars, such as Bakan (2004), Korten (2015), Mikler (2018) and Wilks (2013), have also portrayed corporations as powerful political agents with sophisticated strategies.⁸⁸ This integration of the so-called “economic” and “non-economic” power processes, whether through military spending, legal systems, or religious organisations, all contribute to the consolidation of capitalist power. Without the ongoing shaping and reshaping of power relations, the concept of capital as a manifestation of power may not exist.

But how can leading corporate-government coalitions practice sabotage and differentially accumulate power? If one accepts that the bifurcation between the economic and the political is a misleading fragmentation, the role of the state is significant in these processes and needs to be clarified. The next section explores the mutual transformations of capital and governments within the capitalist mode of power, which shape what Nitzan and Bichler call the “state of capital”.

3.3.5 The state of capital

The role of the state and its very conceptualisation have been a source of controversy in the degrowth literature (D’Alisa & Kallis, 2020). A divide exists between those who formulate propositions implying that a degrowth transition should be realised *with* the state and those who advocate transformations *without* the state (Koch, 2022). The former option is reflected in the many public policies proposed by degrowth scholars (using the term *policies* in a wider sense; an attempt at an exhaustive list has been realised by

⁸⁸ From this viewpoint, corporations cannot be considered mere economic agents buying and selling goods and services at some price established by market equilibrium, laws of value, or setting prices due to their *economic* power. Instead, price symbolises price maker’s confidence in price taker’s submission, i.e., in its relative obligation to accept this price⁸⁸ – due to the wider (social, historical, legal, ecological, cultural) context, that is shaped by sabotage. This is in line with the views of socio-ecological economists: “Prices are the result of power relations and that includes the power to structure markets and regulations in one’s own favour” (Spash & Guisan, 2021, p. 209)

Fitzpatrick et al., 2022; see also Cosme et al., 2017, and Parrique, 2019). The latter option includes roughly the creation, combination and expansion of alternative practices and organisations (e.g. Trainer, 2012). However, in many cases, the ways in which policies would be implemented or alternatives put in place to supplant incumbent institutions are obscure. Showing the crucial lack of theorisation of the state within degrowth scholarship and attempting to reconcile top-down and bottom-up approaches, D’Alisa and Kallis (2020) propose a Gramscian perspective on the state. They see the capitalist state as composed of two spheres: a civil society and a political society. The former is the sphere where social groups and individuals struggle for cultural hegemony – the battle of ideas. It interplays with the political society, where hegemonic ideas are enforced in institutions – using coercion. Degrowth could therefore unfold from a dialectic between the diffusion of new ideas – *common senses* – and institutional enforcements. Koch (2022) explores further the relation between civil society and the state by comparing this approach with Bourdieu and Poulantzas’ analyses.

As products of Marxian traditions, Gramscian and Poulantzas’ theories of the state assume a form of analytical bifurcation between the economic/productive and the political worlds. Sharing more features with Bourdieu’s perspective of the state as a relational and hierarchical entity (a *meta-field*), Nitzan and Bichler claim that as capitalism expands, governments and large corporations become increasingly enfolded. They offer their own distinctive definition of the concept of the *state*, which is, in the abstract, “an ever-changing, historically specific relational entity that both comprises and is shaped by the bodies that constitute it” (Nitzan & Bichler, 2009, p. 281). Therefore, from a CasP perspective, the notion of the state should not be confused with government; it is rather a broader set of relations shaping power distribution in society. Under capitalism, the state is viewed as primarily structured by dynamics between large corporations and key government organs (see Section 3.3.1). To emphasise that these government organs are, to some extent, conditioned, influenced, orientated by the logic of capitalisation,⁸⁹ Nitzan and Bichler (2009) label this relational entity the *state of capital* (p. 299).

⁸⁹ The logic of capitalisation is “the belief that anything that can be ‘owned’ may be reduced to a single, abstract quantity of money” (Fix, 2015, p. 30), or in other words, that any process can be capitalised.

In that sense, they concur with Charles Wright Mills – and broader arguments from elite theory (see also Domhoff, 1967/2013) – when he argues, in his famous book *The Power Elite*:

“No one, accordingly, can be truly powerful unless he has access to the command of major institutions, for it is over these institutional means of power that the truly powerful are, in the first instance, powerful. Higher politicians and key officials of government command such institutional power; so do admirals and generals, and so do the major owners and executives of the larger corporations.” (Mills, 1956/2000, p. 9).

Therefore, instead of being seen as opposing or complementary but very different entities, corporations and government organs are conceptualised as intertwined bodies shaping many aspects of social life together (even when they are not self-aware of their position): “by incessantly seeking to redistribute capitalized earnings, whether at cross purposes or in unison, corporations and governments end up shaping and reshaping the very patterns of power that define capitalism” (Nitzan & Bichler, 2009, pp. 281–282). This intertwinement varies across time and space, giving rise to different power relations and institutional configurations according to the context.

To clarify the underpinnings of the idea of *state of capital*, the intertwinement between governments and corporations is examined below at three levels and presented in relation with degrowth thinking. First, it is shown that leading corporations and governments have tended to support each other mutually since the emergence of the nation-states. Second, the level of autonomy enjoyed by policymakers is discussed. Third, it is recalled that politics and government power are part of the value of capital. Finally, key implications for and from degrowth theory are suggested.

3.3.5.1 Corporations and governments mutually enfolded

Under capitalism, corporations and governments have governed societies rather in symbiosis than in opposition and they presuppose each other: “There are no capitalist corporations without a capitalist government, and there is no capitalist government without corporate or proto-corporate organizations” (Nitzan & Bichler, 2009, p. 281).

As Marx remarked, the nation-state and the capitalist system emerged and evolved historically together – although both were analytically differentiated in his concept of capital (Nitzan & Bichler, 2009, p. 274; see Section 2.4.4). Since their origins, corporations have been delegated governance roles by formal governments. Between the

16th and 19th centuries in Europe, many chartered companies were created and held quasi-governmental positions. They were organisations intended to “help state acquisition and control over trade and resources at the expense of rival powers” (Webster, 2011). These companies especially played a crucial role in colonisation (Ames, 2007). With their extensive powers, they “administered lands, politics, war, trade, and diplomacy” (Barkan, 2013, p. 5). At the end of the 19th century, however, they gave way to modern corporations, whose monopolies were no longer granted by national states but tentatively secured through a wider variety of power processes (Wang, 2015).

Since the 1970s, with the rise of the neoliberal state to various degrees across the capitalist world, publicly traded corporations have gained importance in the role of creating market value and delivering growth (Jessens, 2020). In capitalist societies, corporations deliver many essential goods and services, partially or in totality, under the benevolent eye of governments – think of energy, food, pharmaceutical goods and healthcare, for example. However, in parallel, even in the most neoliberal states, government expenditures do not plummet. But contrary to the neoliberal assumption that *more* public expenditures mean *less* capitalism, government spending and corporate taxation may be increasing in a relative alignment with corporate interests, showing more a re-orientation of governments’ role than a reduction in corporate power (Bichler & Nitzan, 2021c; Braithwaite, 2008; Jordana & Levi-Faur, 2005; Mikler, 2018). In Bichler and Nitzan’s terms, capitalism as a mode of power requires larger governments to enable strategic sabotage (Bichler & Nitzan, 2021b, 2021c). In some cases, global corporations have effectively “hired” governments to handle certain aspects of their activities, with the corporations paying the governments for these services (Mikler, 2018, p. 32). As Éloi Laurent (2016) indicates, “the promoters of the so-called ‘free’ market are in no way calling for an end to public intervention in the economy, they are simply asking that it be diverted in their favour” (p. 22, mt). In sum, for political scientist John Mikler (2018), “the reality is that there are large, powerful global corporations and large, powerful states, and they may be acting together rather than in opposition to one another” (p. 32).

This alignment occurs especially in the making of the law. Like other forms of business, corporations owe their existence to the law, which broadly defines the limits of their operations, while they are part of the making of the same law and regulations (Barkan, 2013; Fuchs, 2013). Jessens (2020) notes that they often secure and take

advantage of *exemptions* to the law.⁹⁰ The corporate power literature shows extensively that dominant corporations and capitalist elites use different means and sources of power to obtain the backing of policy-makers (e.g. Fuchs, 2005; Gottfried, 2019; Wettstein, 2009). For example, by synthesising diverse approaches to business power, Doris Fuchs (2005) delineates three main means of power: *instrumental power*, such as (direct) lobbying of policy-makers; *structural power*, e.g. taking advantage of their “economic importance”, including via “job blackmail” (Grégoire, 2022), to shape policy agendas; and discursive power, by acting at the level of ideology on the ideas that circulate within decision makers and society more generally, for example by funding think tanks. Combined, these means allow corporations to influence their mutual relation with governments and other institutions, and ultimately shape the direction of regulations.

Multinational corporations have a significant advantage in terms of their ability to operate beyond the boundaries of individual countries, because no single government has control over all of the operations of these corporations (Mikler, 2018, p. 22). This means that the power of multinational corporations has become increasingly globalised. As a result, the ability of national governments to regulate and control these corporations has been diluted in a wider mesh of power relations (Bichler & Nitzan, 2021c).

While the privileged position of corporations within the capitalist order is being contested by a fringe of activists and intellectuals, corporations attempt to root their legitimacy in the benefits they allegedly provide to the common good (Barkan, 2013). Historically, social purpose was a core characteristic of the corporation. Whereas it formally disappeared from the 19th century onwards (Davoudi et al., 2018), the idea of contributing positively to society – or at least not negatively – still underlies the corporate discourse (Lin, 2021). Furthermore, many economists view corporations as efficient forms of business (e.g. Hallwood, 2013; Todorova, 2020) and major vehicles of economic growth (e.g. Kordos & Vojtovic, 2016; Lee et al., 2013). Consequently, many economists and business experts remain convinced that corporations can, under certain conditions, contribute to sustainable prosperity for all (e.g. Mayer, 2018; Mirvis, 2020; The Worldwatch Institute, 2012).

⁹⁰ For example, in the past decades, corporations have been given rights and power never seen before with the creation of international treaties protecting their investments – ISDS clauses – guaranteeing them some immunity from national regulations (Osmanski, 2017).

It is, indeed, possible to argue that corporations contribute to the common good drawing on the fact that modern governments rely (to various degrees) on corporations to finance their own activities. As an example, from North to South, especially since the 2000s, governments have been creating sovereign wealth funds (Bortolotti et al., 2015). These government-owned funds are used to invest government money in all sorts of assets such as stocks, bonds, private equity funds, hedge funds, real estate, currencies and precious metals. The financial returns of these funds are used for a wide range of purposes, from stabilising the government budget to financing government pensions for employees, offsetting market instability and funding specific policies. Government operations therefore depend directly on continued corporate operations and capital accumulation (DePamphilis, 2018; Ho & Zhang, 2014).

In that sense, framing the issue in terms of “state capture” or “political capture” (Fuentes-Nieva & Galasso, 2014) of governments by corporations, as some degrowth scholars do (e.g. Speth, 2012), seems reductive. It portrays a one-sided relationship, rather than a multidimensional array of connections, a “partial [and mutual] enfoldment of governments and corporations” (Nitzan & Bichler, 2018, p. 28).

3.3.5.2 Partially conditioned policymakers

Despite this ongoing enfoldment of the actions of government organs and corporations, for CasP theorists, policymakers still enjoy autonomy (Nitzan & Bichler, 2009, p. 381). A variety of political ideologies across the world openly reject the primacy of capital – there are even politicians in favour of degrowth. In this sense, policy-makers and other officials can take a stance independently of the interests of dominant capital. However, their chances of doing so and being in charge diminish as the world is increasingly organised by capitalist power:

“As this corporate-government integration unfolds, government organizations and officials, including ‘reformers’, not only get entangled in the web of capitalized power, but they also find themselves conditioned by its very concepts, symbols, ideologies and rituals. Consequently, most of them cannot even conceive of fundamental change, let alone bring it about.” (Bichler & Nitzan, 2021c)

This idea has commonalities with elite theory (Domhoff, 1967/2013; Mills, 1956/2000), which proposes an alternative to the Marxian view that the dominant class’s *political* power finds its source directly in its *economic* power (Codato & Perissinotto, 2010). Elite theory instead contends that decision makers tend to form an elite

distinguishable by their shared backgrounds and positions. This ever-changing group collectively holds the most power (although their members might not necessarily be self-aware of their position), whereas non-elite groups and individuals are more fragmented and have less governance capacities. Various empirical studies support this approach, showing for example that private and public elites' intertwine in the governance of society (e.g. Benquet & Bourgeron, 2021; Denord et al., 2011; France & Vauchez, 2017; Gilens & Page, 2014; Laurens, 2015).

This view is compatible with the idea that economic growth has ideological sources (see, e.g. Parrique, 2019; Schmelzer, 2016), in contrast with the position rejecting the emphases on the cultural aspects of growth and the claim that its roots are to be found *only* in the productive basis of capital accumulation (e.g. Işıkara, 2020). The pro-growth stance of policymakers and key officials can be seen as fostered by the (notably cultural) intertwinement of government organs and businesses.

3.3.5.3 Government power capitalised

Another form of connection between corporations and governments can be found directly in the way capital is valued. As explained in Section 3.2.2, processes that influence corporations' expected earnings are likely sooner or later to be capitalised (i.e. integrated in the value of their assets). Therefore, among all social phenomena, legislation, policies, wars, and all forms of government power are integrated in the capitalisation levels of corporations:

“Consider DaimlerChrysler. The level and pattern of its differential earnings depend on its tacit and open collusion with the other seven auto titans. They also depend on the highway system provided by governments and the availability of alternative public transportation; they depend on environmental regulation or lack thereof; they depend on the ups and downs in the price of oil and hence on the global political economy of the Middle East; they depend on tax arrangements with various governments and on the use of transfer pricing; they depend on a sophisticated propaganda war that creates wants and shapes desires; they depend on the relative strength of DaimlerChrysler's labour unions; and so on. DaimlerChrysler's profits also hinge on its huge credit operations, and therefore on monetary policy; and they depend on the company's military business, and therefore on the global politics of armament budgets and the threat of inter- and intra-state conflict. Where exactly the government role begins and ends in this complex process of capitalization is difficult to tell, but the magnitude of

this role would become immediately apparent if we removed or curtailed it.” (Nitzan & Bichler, 2009, p. 298)

In that sense, the partial and mutual enfoldment between corporations and government organs is qualitative but also quantitative: government is part of capital (Nitzan & Bichler, 2009, p. 298).

3.3.5.4 Implications for and from degrowth

In summary, CasP conceptualises the *state* as an array of power relationships (rather than as an institution). Government entities, along with large corporations and other influential societal institutions, form the centre of the state – which is therefore termed the *state of capital*. This centre exert considerable power in shaping societal directions, while other groups – capitalist or not – experience centrifugal forces. Modern governments are deeply intertwined with this capitalist mode of power, and despite differences in composition, representation, and policies, they are integral elements of the state of capital (Bichler & Nitzan, 2010).

Given this perspective, degrowth approaches to the state would benefit from a more profound understanding and integration of the complex interconnections between governments and corporations; they should tackle the alignment of interests and co-evolution of corporate and government actors, developing strategies to counter this ongoing integration. Otherwise, the prevailing societal forces that encourage the spread and implementation of the growth paradigm will remain unaddressed. For significant change to occur – and for instance, the implementation of a socio-ecological state (Laurent, 2019) – degrowth involves a new array of power relations; moving degrowth alternatives, institutional reforms, and resistances at the heart of the state is necessary.

3.3.6 Element of dynamics II: Capitalist power imposition and resistance

The CasP perspective involves examining the action of dominant capitalists as a collective. Corporations and their allies in governments and other institutions play a crucial role in differential accumulation by controlling strategic aspects of society together. Capitalism's profit generation relies not only on innovation and production but also on *strategic sabotage*, the exertion of power at large, including by impeding or disabling capitalist and non-capitalist opponents. However, while sabotage can, to an unforeseeable degree, impede resistance (balancing loop B1), its very imposition provokes opposition (reinforcing loop R1). Dominant capital groups' capacity for sabotage is

heavily intertwined with the mutual and partial enfoldment between major corporations and government organs (R2). This enfoldment should be opposed, but it is increasingly difficult, as the world is shaped by capitalist symbols, concepts, material infrastructures, know-hows and other elements (R3).

Therefore, if CasP is correct, the possibility for degrowth transformations relies on this mutual enfoldment of corporations and government organs and the forces countering this dynamic. This dynamic is synthesised as a second element of dynamics, represented as a CLD in Figure 7.

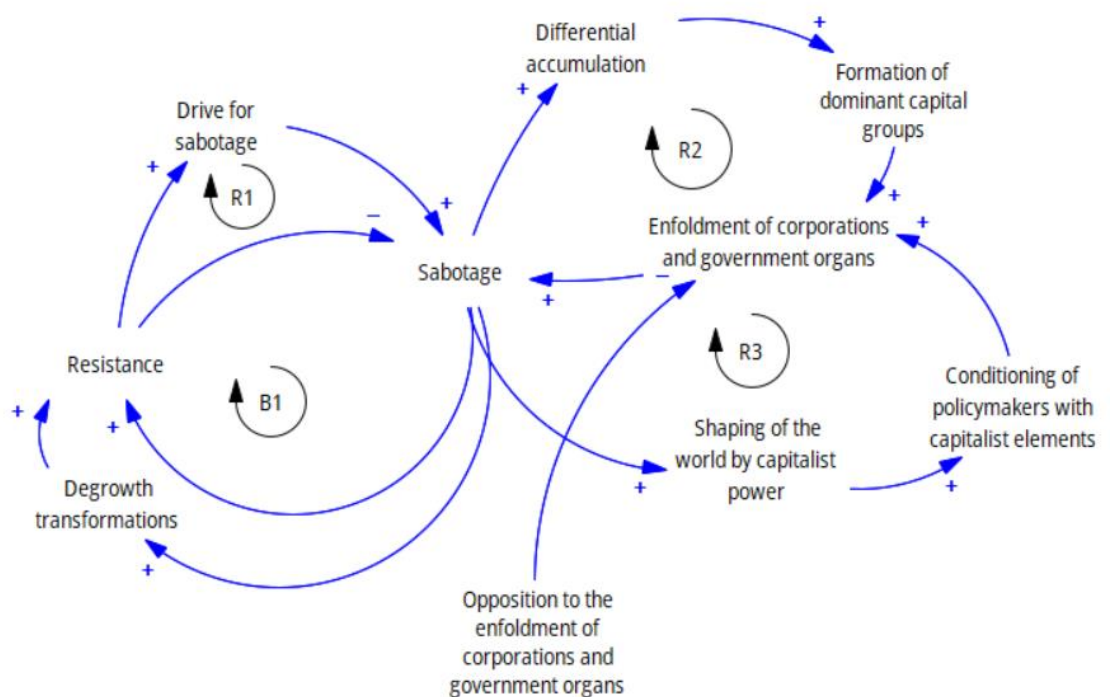


Figure 7. Element of dynamics II: Capitalist power imposition and resistance

3.4 Capital accumulation and energetic-material growth

Degrowth scholars often conflate capital accumulation with economic growth and the growing energetic-material footprint of capitalist societies. However, if capital is not a productive entity but power, how does its accumulation through sabotage relate to growth, i.e. the key process challenged by the degrowth movement? This section explores CasP's more complex relationship between capital accumulation and growth than its conventional counterparts. From this perspective, the root cause of energetic-material

growth is not a compulsion to “productivity gains”; it finds its sources in broader power processes – that those who seek to shift away from the growth paradigm need to grasp. This section starts by discussing the relationship between energetic-material growth and the hierarchical organisation of society through sabotage. To better appreciate this relationship, I then delve into the broad circumstances under which dominant capital groups can undertake differential accumulation. I show that, from a CasP viewpoint, contrary to a common belief about capital accumulation in the degrowth literature, accumulation takes place both with growth and without growth.

3.4.1 Energetic-material growth in power-driven capitalism

CasP does not see capitalism inherently driven by growth but by power in the first place. However, this approach does not deny the role of capital in the exceptional energy growth witnessed under capitalism, on the contrary (e.g. Bichler & Nitzan, 2020a; Di Muzio, 2015a; Fix, Bichler, et al., 2019) – while it would be more comprehensive to consider “energetic-material growth”, due to the coupling of both energy and material consumption to economic growth (Haberl et al., 2020). Growth in energy is analysed as a means in the conflicting processes of power imposition and opposition. For instance, as explained above, complex technologies are not viewed as sources of progress but as sources of power (see Sections 3.3.3 and 3.4.2.2). Nitzan and Bichler do not view an objective tendency for capitalism to necessarily develop *the more* efficient technologies.⁹¹ Technologies and their outcomes are elements of the race for differential accumulation; they must not be considered in isolation but as part of power processes shaping and re-shaping societies and the socio-ecological world in general, providing advantages to some groups at the expense of others. Bichler and Nitzan illustrate:

“Take the early twentieth-century destruction of urban public transportation in the United States, undertaken by the country’s major oil and automobile companies (Barnet 1980: Ch. 2). On its own, this destruction represented a run-of-the-mill attempt by a corporate coalition to augment its differential profit through strategic sabotage. We can say the very same thing about numerous other attempts, including the substitution of the internal-combustion engine for the early electric cars, the subsidized construction of the highway system and the mortgaging of middle-class

⁹¹ Although capitalism has coincided with remarkable growth, it is plausible that alternative systems with fewer instances of sabotage restricting technological innovation and production might potentially yield even higher growth.

Americans into debt servitude. Each of these processes was promoted by and served the power interests of a particular alliance of corporations and investors.” (Bichler & Nitzan, 2020a, p. 38)

Similarly, the political economist of energy and CasP scholar Tim Di Muzio (2015a) recognises the centrality of the logic of differential accumulation and calls the capitalist mode of power “carbon capitalism”. He asserts that the scale and attributes of capitalisation would have been considerably restricted without the discovery and usage of fossil fuels such as coal and oil. This is because the energy required for technological innovations to occur would not have been provided by renewable energy sources, such as wind, water, wood, as well as human and animal power, to which it was connected. Against incessant opposition, early industrial capitalists, colonial merchants, and governments pushed through the “carbonisation” of daily life. This process was primarily caused by the exploitation and consumption of fossil fuels. According to Di Muzio, the development of carbon capitalism is intrinsically linked to the intertwinements between corporate and government actions, resulting in the development of elaborate apparatuses of violence and domination over populations and resources to suppress resistance. Di Muzio (2015a) shows how carbon capitalism has benefited dominant owners at the expense of the rest of the world.

Investigating the links between energy and hierarchy, CasP scholar Blair Fix (2017) suggests that social evolution hinges on energy flows, with increasing energy conversion requiring more complex capture techniques. Based on a quantitative analysis of US corporations and governmental organisations, he shows a positive relation between institution size (the size of a firm or a government) and the energy consumption per capita of this institution. As these systems grow in complexity, they demand heightened social coordination, a task humans are not innately equipped for. To address this limitation, social hierarchies emerge, establishing indirect and impersonal connections among individuals. This enables large-scale coordination, ultimately fostering further social evolution (Fix, 2019).

While Fix empirically focusses on the size and hierarchical structure of formal organisations to support his claims, Bichler and Nitzan (2020a) hypothesise that this growing complexity applies to hierarchical processes more broadly. Rather than trying to elucidate why energy use necessitates hierarchy, they investigate why a power-driven society grows in energy consumption. In their view, the ongoing transformation of the

socio-ecological world through dialectic between sabotage by ruling groups and opposition by the ruled society (including human-nature relations), involves growing hierarchical processes, leading to further opposition and expansion. On the one hand, exertion of sabotage may require energy and material resources. For example, think of the environmentally destructive industrial food system as a set of power relations generated through sabotage. On the other hand, the processes generated tend to expand the ability of capitalist groups to capture further energy and use further materials – with more and more complex organisations and techniques. Running a coal mine or organising food trade at the global scale require, indeed, a wide-range of power processes.

In short, from the CasP perspective, the source of critical environmental issues lies not only in particular modes of production but also fundamentally in the hierarchical nature of capitalism. In that sense, degrowth's concern for flatter power relations (Liegey & Nelson, 2020) is not only a question of organising a democratic transition, but also directly connected to the possibility of moving beyond the energy-intense and extractive model.

To better understand how sabotage causes energetic-material growth, it is useful to look deeper into the ways in which dominant capital shapes itself against multiple oppositions. The *regimes of differential accumulation* defined by Nitzan and Bichler offer useful lenses in this regard.

3.4.2 Regimes of differential accumulation

CasP theorists outline four interrelated regimes through which leading capital groups may utilise their extensive sabotage capabilities to attain differential power⁹² (Nitzan, 2001; Nitzan & Bichler, 2009). These regimes stem from the notion that a company's profit levels result from the multiplication of sales (in monetary terms) by the profit share of those sales (the portion of the price considered profit). This breakdown reveals two primary avenues for differential accumulation: breadth and depth.⁹³

⁹² These paths can be observed for a company or at the societal level.

⁹³ Note that in their later works, Nitzan and Bichler consider a slightly different (but largely equivalent) decomposition: the level of profit is the multiplication of *the number of employees* by the *profit per employee*. *Breadth* is the differential augmentation of the organisation's size (in employees), whereas *depth* is the differential growth in profit per employee. I prefer the decomposition in terms of sales and profit per sale for the sake of clarity. However, except for some nuances, both decompositions lead to the same four regimes of accumulation, keeping their respective logics unchanged.

Breadth, characterised by growth surpassing the average, can be further categorised into greenfield growth (expansion of production; external breadth) and amalgamation (often through mergers and acquisitions, as well as globalisation; internal breadth). Depth, on the other hand, concentrates on reducing costs (internal depth) or promoting stagflation (differentially raising prices; external depth) and constitutes another facet of differential accumulation. Each regime corresponds to distinct power dynamics, ultimately contributing to the increased differential power of dominant capital groups.

3.4.2.1 Breadth

It is easier to share a larger cake, as its increased size allows everyone to have a more generous portion without having to restrain themselves. Likewise, greenfield growth and amalgamation tend to be associated with overall economic growth (Nitzan, 2001; Nitzan & Bichler, 2009).

3.4.2.2 Greenfield growth

Greenfield growth corresponds to the expansion of productive activities and sales volume. By differentially expanding sales, greenfield growth contributes to the material-energetic footprint of the company or group of companies considered, but this is not a mere economic or business process. Greenfield growth must rely on sabotage to expand its production and sales, such as the control of advantageous technologies. Remember that following Veblen, CasP emphasises that only technologies that offer *differential* control over social life are effective to accumulate (see Section 3.3.3). Capitalists therefore must influence the societal context to generate profits with this technology and to prevent, to a certain extent, others from benefiting from the same technological innovation, which would otherwise allow them to do the same and annihilate differential profits. For example, patents are the most basic form of legal restriction put on the spread of technologies.

In that sense, CasP emphasises the conflictual nature of economic growth.⁹⁴ The sole “performance” of some technology tells little about whether it can contribute to accumulation. The wide-ranging means of controlling this technology and its use within

⁹⁴ In that sense, growth is fundamental to capitalism not because businesses are mechanically compelled to grow. Instead, it is one means – among others – of keeping up in the race for differential power.

society are crucial. Lewis Mumford (1964)⁹⁵ addresses the issue of control with his dichotomy between *democratic* and *authoritarian technics*. The former category refers to relatively simple techniques, locally controlled, relying mainly on the energy of people and animals. Mumford emphasises the adaptability of these systems to the varying conditions in which they are deployed. Conversely, *authoritarian technics* are complex; and they involve many power relations that shape the conditions in which they are used. In general, the more complicated the techniques and the more dependent they are on resources that are difficult to control, the easier it is to monopolise them. Systems that cannot be easily adapted to various contexts, which limits their potential control by diverse groups within society, are ideal for differential accumulation. The development and use of authoritarian techniques run counter to the democratic techniques advocated by the degrowth community, such as low-techs (Alexander & Yacoumis, 2016), convivial innovations (Bobulescu & Fritscheova, 2021) and open-source software (Barbas Baptista, 2020). Overall, productive expansion tends to rely on conflictual dynamics, such as shown by Di Muzio (2015a), cited in Section 3.4.1.

However, growth is not the alpha and omega of accumulation. For CasP analysts, periods of stagnation or negative GDP growth do not necessarily threaten the (differential) power of dominant capital – sometimes, they even boost it (Nitzan & Bichler, 2014). Indeed, some groups of corporations might still be able to grow differentially while others decline – and dominant capital groups are, in principle, the ones with the greatest ability to do so. Conversely, pro-growth policies led by governments have necessarily differential effects within the capitalist order and may not be desired equally by all businesses.⁹⁶ As an example, the famous financial analyst and investor Marc Faber considers the recession a necessary “clean up” of the system and

⁹⁵ Lewis Mumford, with his critical analysis of the industrial civilisation, has influenced both degrowth thinking (Paquot, 2015) and CasP (Nitzan & Bichler, 2009, pp. 14–16, 264–270, 282).

⁹⁶ Nitzan and Bichler (2014) wonder whether dominant capital can always *afford* economic recovery. Rather than thinking of negative growth as an existential threat to capitalism, they empirically derive two tentative conditions for dominant capital to maintain itself. The first condition is positive differential accumulation, which means that if the whole capitalist world shrinks, leading capitalist organisations should shrink slower than the others. The second condition is a steady or increasing capital share of income (at the expense of workers). They hypothesise that breaking one of these two conditions might provoke a major capitalist crisis (Nitzan, 1998; Nitzan & Bichler, 2014). In this sense, for example, economic growth resulting from an increase in lower wages might be harmful for dominant capitalists because it may increase the relative power of workers over capitalists. Similarly, if GDP growth is positive but leading capitalist groups are unable to accumulate faster than other businesses, it might result in a crisis where they vigorously attempt to tighten the grip they have on society.

wants “to be among those who [lose] the least” (Pupazzoni & Robinson, 2022). The French precursor of degrowth Paul Ariès described this phenomenon well:

“... negative growth is necessarily catastrophic for people. Not for capital: recession is used by companies to re-establish their level of profit by eliminating their weakest competitors, to reduce the wages and rights of employees, to obtain advantages from the state, to dismantle labour law, the environment, social infrastructures... For capitalists, recession is used to start all over again in a worse way than before, whereas the project of degrowth is to start all over again in a completely different way: to get out of capitalism and the religion of growth.” (Ariès, 2010, mt)

In times of recession, shrinking less than average is an option to safeguard one’s relative position within the capitalist order, while there are also other paths of differential accumulation: amalgamation, cost-cutting and stagflation.

3.4.2.3 Amalgamation

Corporations indeed have another prominent way to grow: by buying or merging with other companies. Empirical evidence shows that since the end of the 19th century, US and UK corporations have tended to invest proportionally more and more in mergers and acquisitions, or M&As (Francis et al., 2013), leading to periodic waves of amalgamation (Cho & Chung, 2022). From 1960 to 2020, US and UK corporations have respectively devoted, on average, 38.4% and 17.2% of their investment expenditures to buying other firms.⁹⁷ On the whole, approximately 63 000 M&A deals were made at the global scale in 2021, for a total value of \$US 5.9 trillion (around 6% of the global GDP), setting a new record (Toole, 2022). In practice, “[a]cquisitions are far more common than mergers, as firms that are already dominant are more likely to have internally-generated resources or can borrow to finance buyouts of other firms” (Howard, 2016, p. 25).

The motive for M&As has long been enigmatic for economists, who could not explain it by cost-cutting potentials or combined effects alone. Most M&As are even deceptive or neutral in economic terms, especially due to the many unanticipated organisational problems they raise (Chatterjee, 2007; Nitzan, 2001; Nitzan & Bichler, 2009, pp. 338–343). The leading business consultancy McKinsey confirms, “[m]ost mergers are doomed from the beginning. Anyone who has researched merger success

⁹⁷ More precisely, these percentages reflect the Build-to-Build indicator (Nitzan & Bichler, 2009, p. 338), based on the values of acquisitions out of *gross fixed domestic investment*. Own calculations based on Joseph Francis’s (2018/2021) data.

rates knows that roughly 70 percent of mergers fail [to achieve revenue synergies]” (McLetchie & West, 2010, p. 3). Why do companies tend to unite and even form “giants”, then? For CasP theorists, capitalist groups join forces to increase their *differential* power over society, which is crucial for their long-term survival and position within the dynamic capitalist order. The more they weigh in the balance, the more easily they can undertake sabotage relative to others and stay afloat.

To happen, M&As need fresh prey, whose emergence is facilitated by economic growth. But when they are no longer sufficiently capable of being conducted at one level, M&As need to be taken elsewhere. This process of amalgamation then occurs at successive scales, from the industry level to the sector level to the national level, and finally to the global scale, breaking successive “envelopes”, i.e. geographical and political boundaries⁹⁸ (Nitzan & Bichler, 2009, pp. 350–359). In that sense, M&As drive the geographical integration of ownership and, ultimately, globalisation (Nitzan, 2001) – a process that is often viewed as beneficial to growth (Grossman & Helpman, 2015). From the CasP viewpoint, the goal of globalisation is, however, to augment the differential control of powerful coalitions over productive activities and income-generating assets (Nitzan, 2001; Nitzan & Bichler, 2009, p. 350). This is crucial as globalisation is often identified as a major source of energy-material capture and associated environmental harms (Ehrenfeld, 2003; Kaur, 2020).

So far, degrowth has crucially lacked any investigation of the implications of M&As. However, putting more power into fewer hands, which belong to a group that has locked itself into the logic of differential accumulation, is likely to raise the risk of trouble for socio-ecological transformations in line with degrowth principles. It goes against the decentralised, polycentric, pluriversal and democratic governance of society sought by degrowth (Asara et al., 2013; Savini, 2021; Vandeventer et al., 2019). Tackling M&As and their consequences within the context of degrowth is essential to ensuring that the pursuit of a more sustainable, just, and democratic society is not undermined by the concentration of power.

Finally, when the drive for M&As faces exhaustion, as it periodically does (Vazirani, 2015), when dominant capital is becoming cramped in its global envelope, and

⁹⁸ By emphasising the monopolistic tendency of capitalism, Capital as Power is in line with analyses from the neo-Marxist school Monopoly Capitalism (Baran & Sweezy, 1966), although they also differ on some fundamental assumptions (see Footnote 44, p. 93).

when growth should not be pushed further, depth regimes are other crucial paths for differential accumulation.

3.4.2.4 Depth

The last two regimes, internal depth and external depth, refer to processes in which coalitions of capitalists attempt to increase their power differentially, for a same level of sales. Under depth regimes, capitalists do not expand or amalgamate their activities, but they make more profit for the same effort in production and commercialisation – by potentially using all kinds of means. Contrary to breadth, depth is associated with social conflicts, limitations of industry (see Section 3.3.3), and economic stagnation – and thus is less intense from a material-energetic point of view.

3.4.2.5 Cost-cutting

Internal depth usually means cutting costs faster than average. Through their cost-cutting strategies, capitalists develop uncountable ways of earning more profits with less money – and, to some extent, also producing more for the same cost, influencing external breadth positively in the long term. Strategies to increase profitability by cutting costs include streamlining operations, outsourcing work, reducing workforce size and intensifying work, negotiating with suppliers, lowering overhead costs, implementing energy-saving measures, changing technology (Baker & McKenzie, 2020; McKinsey, 2021), lobbying policymakers for advantageous tax regimes, killing trade unionists and strikers (Blackburn, 2015), violating environmental rules, and dismantling environmental policies.

Many of cost-cutting strategies potentially generate social injustices and are thus sources of social conflicts. Depending on the context, they can trigger opposition from social forces such as labour unions and environmental activists. While these strategies are often associated with economic downturn, the exploitation of labour and more generally, the capitalist control and devastation of sustainable livelihoods, appears in direct contradiction with the pursuit of collective well-being, equality and the sense of limits put forward by degrowth.

Note that in Nitzan and Bichler's (2001) view, cost-cutting is not necessarily the easiest path for differential accumulation. Indeed, "technology is difficult to monopolize indefinitely, and [...] even the most powerful corporate coalitions have only limited control over input prices" (p. 34). To increase profit margins – the elemental power of an

organisation – cutting costs is one route, whereas the other main route is to secure price increases. This leads us to the last regime of accumulation: external depth or *stagflation*.

3.4.2.6 Stagflation

External depth means expanding earnings through *differential price increase*, other things being equal: “Those who inflate their prices faster than the average end up redistributing income in their favour” (Nitzan & Bichler, 2009, p. 19). Raising their prices is indeed not within the reach of all companies, hence the interest in amalgamating or allying with other capitalist groups and government organs – i.e. internal breadth (see Section 3.4.2.3). In doing so, they may enjoy bigger capacities of sabotage allowing them to differentially increase their prices. Up to a certain point, the relative profit increase per unit exceeds the relative sales decline (Nitzan & Bichler, 2001).

At a societal scale, price rises are referred to as inflation, which, CasP scholars show, is often combined with stagnation (contrary to conventional economic hypotheses), and the combination to be called stagflation (Nitzan, 1992, 2001; Nitzan & Bichler, 2000b). Far from being the homogeneous rise often depicted by economists, inflation is inherently a redistributive phenomenon, deepening inequalities and shifting power relations.⁹⁹ For instance, evidence shows that it tends to raise income inequality, as well as to redistribute revenue from salaries to profits and from small to large businesses (Nitzan, 1992; Thalassinos et al., 2012; Wimer et al., 2019). Economic models usually predict that inflation comes with economic growth, whereas deflation is associated with stagnation. Nitzan and Bichler empirically reject these predictions (Nitzan & Bichler, 2009, pp. 377–378). Instead of being an anomaly, a symptom of a malfunctioning capitalist economy (e.g. Reisman, 2018), or a structural crisis (e.g. Boyer & Alary, 2019), stagflation is seen as part of the norm, a standard regime of differential accumulation.

Since inflation tends to be associated with economic stagnation, in the short term, it may have positive environmental benefits but adverse social effects. In the long term, it can be even more problematic as inflation can concur with an augmentation of the differential power of groups that play a significant role in our societies’ dependency on fossil fuels (Di Muzio, 2015a). The sharp rises in energy prices and the subsequent inflation that countries across the world have experienced to various degrees in 2021 and

⁹⁹ For example, see Fix (2021b) for a disaggregated view of recent inflation in the United States by commodity group.

2022 (IMF, 2022) illustrate this. Official statistics from the European Union and the United States show that corporate profits have surged and even set a 70-year record in the United States (BEA, 2022; Eurostat, 2022). The capitalist groups that have especially been able to raise their prices differentially are the energy companies (Baunsgaard & Vernon, 2022).

Evidence from the US shows that stagflation tends to come in waves, alternating with waves of amalgamation (Nitzan, 1998, 2001). Together, they appear to be the most effective paths to differential accumulation. Differential price rise is thus a key process in the formation of dominant capital.

3.4.3 Element of dynamics III: Power foundations of growth

What do *cost-cutting* and *mergers and acquisitions* have to do with energetic-material growth? While degrowth scholarship has rarely studied these indirect but crucial relations, this element of dynamics offers a systemic perspective on the links between growth and the different ways of accumulating.

Since accumulation is viewed as a *differential* process and capital as a financial value symbolising *power at large*, CasP does establish a linear relationship between accumulation, production and economic growth. Overall, hierarchical power processes – or in other words, *sabotage* – require significant amounts of energy and resources to maintain control over the resistance they necessarily stimulate. These power processes include “productive processes”, such as the development of technologies and of mass production. In turn, a more hierarchical organisation of capitalism helps capitalist groups to capture energy with more ease. As Tim Di Muzio (2015a) shows, the ongoing “carbonisation” of social life is deeply conflictual; it has always been realised against resistance – including potentially from the practices and movements aligned with the degrowth project.

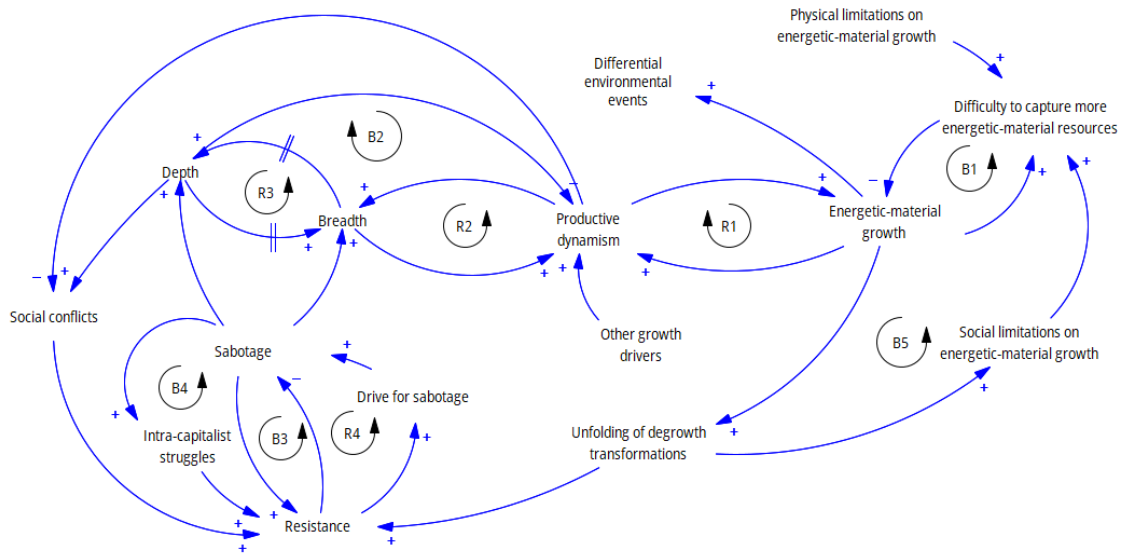


Figure 8. Element of dynamics III: Power foundations of growth

How does the imposition of power contribute to energetic-material growth? This dynamic is modelled as an element of dynamics in Figure 8. A basic premise of degrowth is that energy-material capture cannot grow infinitely and social and physical limitations act as a balancing force, preventing unlimited growth in the system (B1, B5). While energy-material growth can be viewed as both an enabler and an outcome of productive dynamism (i.e. GDP growth; R1), this is only the tip of the iceberg. For CasP, the dynamic of capitalism is mainly driven by the ongoing formation of dominant capital (see Section 3.3.1), through the dialectic between sabotage and resistance (B3, B4, R4).

This thus calls for examination of how the imposition of power by these groups relates to energy-material growth, while other growth drivers may coexist (see Richters & Siemoneit, 2019). Two different regimes of accumulation can be observed in the creation of hierarchies supporting the differential power of dominant capital: breadth and depth. Breadth, in the context of dominant capital, refers to the acceleration of sales at a pace surpassing the average. This acceleration is experienced through technological innovation, productive expansion, and amalgamation, which includes mergers, acquisitions, and globalisation. It is crucial, however, to recognise that this productive expansion and growth is not solely a material process. It also involves the promotion and acceptance of the notion that growth equates to progress and other power processes, which form an integral part of the expansion process. Furthermore, breadth is closely associated with productive dynamism, which, in turn, may amplify breadth (R2) and thus

result in increased energetic-material capture. Depth mainly relates to cost-cutting and raising prices to augment dominant capital's profit per sale, through cost-cutting measures and stagflation. Depth is rather associated with economic stagnation, and thus less productive dynamism (B2). While depth is more conflictual than breadth, these regimes tend to move counter-cyclically to one another, with a delay – and overall, support each other (R3).

Consequently, to hamper the power of corporate-government coalitions which attempt to tentatively lock society in socially and environmentally destructive patterns, degrowth transformations should seek not only to hinder growth, but to struggle against the various regimes of differential accumulation. This includes a firmer stance against mergers and acquisitions, cost-cutting measures and differential price increases. If the relationships hypothesised are true, this encourages further the degrowth community to join forces with workers' movements in a spirited effort to combat the unjust cost-cutting practices and the inflation and stagflation fostered by large corporations, as well as with the movements struggling against power concentration in different sectors.

Finally, it should be emphasised that these regimes of accumulation are not predictive laws of motion:

“Simply put, differential accumulation *does not have to happen*. It will happen if there are mergers. It will probably happen if there is stagflation. But mergers and stagflation themselves do not have to happen. Dominant capital may seek mergers or stagflation, but it could fail to achieve them – fail because of opposition, inner conflicts, or its own incompetence. And if neither merger nor stagflation prevails, the likely result is differential *decumulation*.” (Bichler & Nitzan, 2004, p. 290; original emphases).

In other words, these are possible paths which have been occurring to various degrees in modern capitalism, without being exclusive to each other. These paths help observers making sense of capitalist dynamics, but they do not allow predictions to be made. The good news, from a degrowth perspective, is that the future of capitalism, sabotage, and energetic-material growth is fundamentally open. The next section explores certain conditions under which dominant capital would loosen its grip on society (including human-nature relations), possibly leading to the end of capitalism.

3.5 Beyond the capitalist mode of power?

Because the degrowth project advocates for a significant departure from capitalism, to be complete, its theory of change needs to reflect on the potential ending of capitalism – and more crucially, on its central process, capital accumulation. Despite the explicit anticapitalist endeavour of degrowth, the very possibility of a large-scale rupture with capitalism has been overlooked in the degrowth literature. When considering how to transition to degrowth, degrowth studies have mainly focussed on top-down eco-social policies, bottom-up alternatives and small-scale ruptures (Chertkovskaya, 2022; Schmelzer et al., 2022), with little discussion of the conditions under which capitalism would explicitly die out.

An exception is Buch-Hansen (2018), who draws on contemporary political economy in the Marxian tradition – regulation theory, the social structures of accumulation approach and transnational historical materialism – to identify four prerequisites for paradigm shifts: a deep crisis, an alternative political project, a comprehensive coalition of social forces promoting the project in political struggles, and broad-based consent. Buch-Hansen’s notion of crisis, however, separates the economic and the political: the process of capital accumulation is seen as a malfunctioning engine that has to be “stabilised by means of various institutional arrangements” (p. 158). The multiplication and aggravation of crises in different areas may lead to changes in institutional arrangements if the crises cannot “be resolved simultaneously within the framework of an economic system that needs to grow” (p. 146). In other words, the capitalist system should begin to disintegrate as a result of its own contradictions, as a prerequisite for a paradigm shift. Additionally, this analysis ignores the ability of capitalists to (differentially) accumulate in times of negative growth and draws on a framework that has “predominantly been designed to understand capitalism and socio-economic change *within* this [capitalist] system” (p. 160), rather than to transcend it. The question of how capitalist power would be dismantled or circumvented to leave room for another society remains open. This must, importantly, be addressed in order for degrowth theory to be effective in bringing about radical socio-ecological transformations.

For Bichler and Nitzan (2010), a key condition for the capitalist mode of power to endure is that capitalists need to believe that the process of capitalisation will not be interrupted and continue to influence and shape the world indefinitely, otherwise the

value of their assets would fall, and their *confidence in obedience* would collapse. But will it be eternal?

3.5.1 Asymptotes of power and systemic fear

As Boldizzoni (2020) contends, “the rise, endurance, and decline of [capitalist] systems depend on conditions that transcend the features inherent in their fabric” (p. 14). If we accept capitalisation as the core process of the capitalist mode of power, it means that the potential failure of capitalism to maintain itself can potentially be observed in patterns that contradict the continuity of this forward-looking power process. Nitzan and Bichler explain in an interview paper:

“The dynamics of capitalism and the limits, or asymptotes, of its power cannot be easily reduced to strictly ‘objective’ conditions. They depend on the ability of the rulers to force themselves on the rest of society – and the confidence they have in this ability. For this reason, crises in capitalism have much to do with the rulers’ fears – which, contrary to the Marxist vision, are not a fictitious element of financial irrationality, but a key dimension of capitalization and an integral aspect of accumulation.” (Debailleul et al., 2016, p. 11)

Indeed, capitalists inherently anticipate the perpetuation of capitalisation, with the understanding that any halt in this process would render their assets valueless. Their investments are driven by the expectation of asset value growth, indicating a persistent belief in the ongoing nature of the valuation process. Whether consciously or subconsciously, this mindset reinforces the notion that the processes underlying the valuation of their assets shall remain ever-present, thereby ensuring a continuous pursuit of capital accumulation (Bichler & Nitzan, 2016).

Bichler and Nitzan (2012, 2016) have proposed the concept of systemic fear to investigate the *inner confidence* of capitalists in the long-term stability of their mode of power.¹⁰⁰ The pair derived this concept from US empirical evidence showing that during some periods, capitalisation tends to become backward-looking (based on the past financial performance of firms) rather than anticipating future events, as it is supposed to. They identify this by looking at the correlation between stock prices (reflecting expected future earnings) and earnings per share (actual profits made by a company). They

¹⁰⁰ It contrasts with the *outer confidence* in their ability to shape society and nature against opposition reflected in differential capitalisation levels.

encapsulate this correlation in their “systemic fear index” (Bichler & Nitzan, 2016). In their view, the more they are correlated, the more capitalists ignore the future:

“fearing for the collapse of their system, capitalists lose sight of the future; with the future having become opaque, the ritual of capitalization falls into disarray; with capitalization having been punctured, dominant ideology is deeply shaken; with dominant ideology having cracked, the capitalists’ confidence in obedience tumbles; and with no confidence in obedience, the very continuation of the capitalist mode of power is put into question” (p. 2)

Remarkably, Nitzan and Bichler (2016) observe that the systemic fear index is highest when the relative power of dominant capital, measured as the S&P500 index divided by the average US wage (the “power index”), is highest too. Why would capitalists be the most fearful when their differential power is peaking? Nitzan and Bichler hypothesise that when dominant capital groups do not see an easy way to further their relative power over society, they may think they have reached an “asymptote”, what they perceive as a limit to the expansion of their power over society. Conversely,

“the lower the capitalized power, the *greater the scope for increasing it further*: income can be further redistributed in favour of profit, hype can be further amplified, profit volatility can be further decreased and the normal rate of return can be further lowered.” (Bichler & Nitzan, 2016, p. 143; original emphasis)

Baines and Hager (2020) analysed the relation between systemic fear and capitalist power at the global level using financial data from four countries: France, Germany, the United Kingdom, and Japan. They identified similarities and differences in these countries' patterns compared to the United States within Bichler and Nitzan's argument. Based on their findings, they concluded that systemic fear might not be well-suited to understanding the dynamics of the stock market across the world. However, McMahon (2021), in a broader study involving a total of twelve affluent countries (Australia, Canada, France, Germany, Great Britain, Japan, the Netherlands, South Africa, South Korea, Sweden, Switzerland and the United States), reinterprets and extends their results, and reveals an overall positive correlation between systemic fear and capitalist power at the international level. According to McMahon's research, systemic fear as a political-economic concept holds greater promise for explaining dynamics of capital accumulation outside the US. McMahon also looked at periods during which the different countries simulatenously experience systemic fear. He shows that at the

international level, peaks of systemic fear have coincided with some of the most significant political-economic crises over the past four decades. He indicates that in recent years, we have been experiencing yet another such peak.

In sum, in CasP, major crises of capitalism are not expected to arise from “internal contradictions” (there are no fixed laws and rules), or from “irrational” financial markets “disconnected from reality” (capitalisation *reflects and shapes reality*). They involve wide-ranging power processes interwoven with the mindset of ruling capitalists and specifically their confidence in their ability to maintain their mode of power over the long term. In the context of systemic fear, the normally forward-looking capitalisation process tends to be short-sighted. Nitzan and Bichler speculate that this can ultimately set the stage for a collapse of the rule of dominant capital and possibilities for systemic change:

“When the ruling class is no longer certain of its ability to govern, it becomes indecisive; indecision inhibits ruthlessness; lack of ruthlessness fuels opposition; and effective opposition is the other side of disintegrating rule. It is only at that point, when it becomes obvious that the ruling class, benumbed by systemic fear, has lost control, that final collapse becomes possible.” (Bichler, 2010, p. 31).

If Bichler and Nitzan’s hypothesis is correct, a radical transformation of society towards degrowth and beyond capitalism may coincide with a slow or fast disintegration of the ritual of capitalisation.

3.5.2 Element of dynamics IV: Asymptotes of power

“Adults keep saying: ‘We owe it to the young people to give them hope.’ But I don’t want your hope. I don’t want you to be hopeful. I want you to panic. I want you to feel the fear I feel every day.”

— Greta Thunberg, World Economic Forum (2019)

The dynamic of the asymptotes of power is represented in Figure 9. Capitalised power can often continue to grow for an extended period without facing significant obstacles. However, as this power grows, it becomes increasingly reliant on sabotage in order to maintain its growth. At some point, the need for sabotage becomes a hindrance to further power expansion (B1). Paradoxically, this makes the capitalist power more vulnerable to sudden, drastic changes in circumstances (Bichler & Nitzan, 2020c). The difficulty of

extorting more sabotage may, indeed, impede the inner confidence of capitalists in their ability to maintain their mode of power; they experience *systemic fear*, which involves the break down of the ritual of capitalisation. This may coincide with indecision and wider possibilities for systemic change (R1). The unfolding of degrowth transformations may be facilitated, while they continue to take part of the dialectic between sabotage and resistance to dominant capital’s power (B2, R2) – whose effectiveness is context-dependent and may influence the outcome.

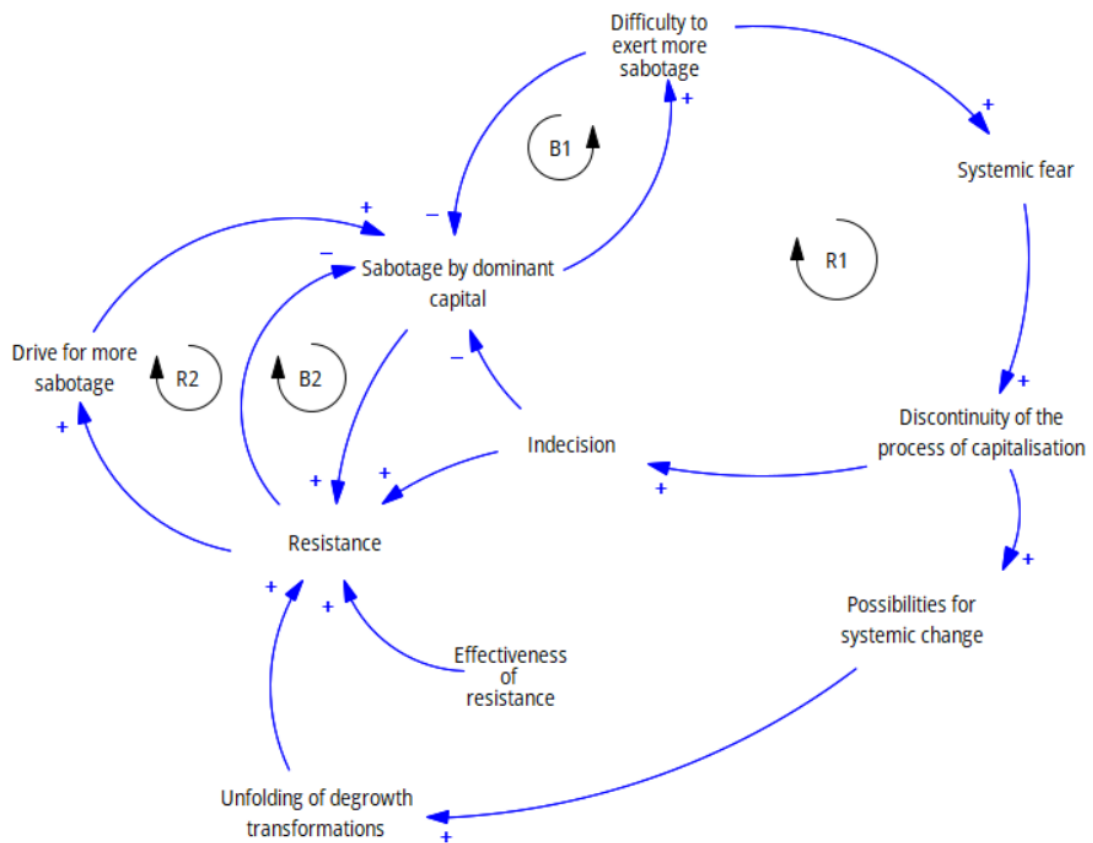


Figure 9. Element of dynamics IV: Asymptotes of power

On the whole, while there is no predefined recipe to undermine capitalism, there is thus at least one condition that needs to be met if the capitalist mode of power has to end: the loss of confidence among dominant capital groups in their ability to shape society against resistance in the long term. This implies that degrowth transformations should bring society not only to a point where it undermines the power of dominant capital groups, but also their capacity to apprehend the future and their capacity to project themselves in a trajectory of sabotage. In this way, the very “algorithm” of capitalisation,

which extensively organises society and gives capitalists a tool to measure their respective confidence in their ability to rule, is shaken.

3.6 CasP and degrowth: Open questions

As this dialogue shows, CasP and degrowth studies have untapped potential for a compelling nexus of debate and exploration. Before continuing our journey in the assembling of a theory of change for degrowth, in Chapter 4, this section delves into open questions raised by the combination of these two frameworks – about the empirical difficulties of capturing subtle resistances, the intertwined relationships between state and corporate entities, the core motivations driving capitalism, and the implications of CasP’s “systemic fear” for degrowth.

First, CasP provides a compelling lens for understanding the dynamics of capitalist power by examining disparate capitalisation figures. These metrics offer invaluable insight into the power shifts and fluctuations within capitalist relations (see Section 3.2.2). How do we empirically capture more subtle, low-key resistances to capitalist power, such as those embodied by degrowth transformations nowadays? The power underlying towering hierarchies is easily quantifiable, whereas the nuanced and often grassroots movements of degrowth, which advocate for a deliberate scaling down of production and consumption to achieve sustainable and equitable outcomes, pose a challenge. How can the impact and influence of these transformations be measured in a world dominated by growth and capital accumulation metrics?

Second, the partial and mutual enfoldment between government organs and corporate entities is undeniably complex, and its influence on the prevalent growth paradigm merits further investigation. The multidimensional array of relationships between political decision-makers and dominant capitalists is central in CasP (see Section 3.3.5). As dominant capital is a set of relations rather than static entities, acting upon is far from trivial. Furthermore, one could ask: How have these inextricable relationships affected policymaking in support of a growth-centric worldview? In what ways can the world’s organisation around growth be viewed not only as an economic necessity, but also as a deeply ingrained political choice? Can we and how might we begin to disentangle these relationships to pave the way for socio-ecological transformations, as those advocated by degrowth?

Third, both CasP theorists and degrowth scholars dismiss GDP, whose inflation-adjusted version, “real GDP”, is called a “flawed metric” by CasP scholars (Fix, Nitzan, et al., 2019), while the use of GDP as an indicator of progress, wellbeing and prosperity is criticised by degrowth scholars (Parrique, 2022). However, the actual role of GDP in society may be a source of contention. Scholars who advocate for degrowth frequently argue that the unyielding pursuit of economic growth, typically quantified by the GDP, serves as the principal driving force behind capitalism (see Section 1.2.1). Is the phenomenon of growth really what drives, in every circumstances, capitalism? CasP theorists contend that it is the accumulation of differential power, as manifested by differential accumulation, that constitutes the fundamental driver of capitalism (see Section 3.4.1). Does power represent the ultimate objective, with growth serving solely as a dynamic to solidify and extend it? Can these perspectives be reconciled and how?

Last, the concept of systemic fear emerges as a pivotal concept in the CasP framework (see Section 3.5.1). It occurs when dominant capital, or ruling entities, face doubts about their ability to maintain and extend their power in the future. When this forward-looking process of capitalisation becomes backward-looking, rooted in present and past earnings, those in power can become profoundly disoriented. According to Nitzan and Bichler, such moments could cause significant changes in the social order. But what does this mean for degrowth transformations? Should degrowth advocates more aggressively articulate and champion alternative futures if the inability to envision a future of power consolidation induces systemic fear? Can degrowth transformations amplify this systemic fear by presenting a compelling, sustainable, and equitable vision of the future, thereby accelerating the potential for transformative change? And, if so, how can degrowth transformations be framed in such a way that they not only challenge the dominant growth paradigm but also reclaim the future narrative in a way that shakes the foundations of capitalist power?

In short, it is clear from synthesising the intricate dialogues between Capital as Power theory and degrowth studies that the intersections of power, growth, and resistance are multifaceted and deeply intertwined. As we grapple with the challenges and potentials of these agendas, it is critical to remain open to the transformative possibilities that emerge from their intersection.

3.7 Conclusion

In conclusion, this chapter has provided a comprehensive overview of the dynamics of capital accumulation from the CasP perspective and explored its implications for the unfolding of degrowth transformations. By oscillating between CasP theory and degrowth, the chapter has elucidated key concepts from the former and demonstrated their relevance to the latter, ultimately offering valuable insights into the potential pathways for achieving degrowth transformations in the face of capital accumulation.

Crucially, the CasP perspective offers a more holistic understanding of capital dynamics than the conventional views prevailing in the degrowth literature. By examining capitalism beyond economic lenses and focussing on power relations, CasP contributes to our understanding of the complex interplay between socio-ecological processes, capital accumulation, and resistance movements like degrowth. This perspective emphatically encourages the degrowth community to confront not only growth, which exacerbates Earth's declining habitability, but also differential accumulation, a sweeping process of power consolidation that may impede the prospects for a successful degrowth transition.

For this purpose, the chapter presented four CLDs, each serving as an element of dynamics for a theory of change for degrowth. These elements encompass the following key dynamics: first, to challenge capitalist power, degrowth transformations should undermine the confidence of capitalists to generate future earnings, which may affect accumulation patterns and influence the way capitalists attempt to shape society, undermining the possibilities for degrowth transformations. In this sense, the degrowth transition is not external to capital accumulation, it involves a set of power processes that are part of it. Second, the key role of dominant capital groups, the largest corporations, and their allies in governments and other institutions in shaping strategic aspects of society is highlighted. Therefore these groups are also crucial regarding the possibilities for socio-ecological change. Third, it focusses on the non-linear relationship between accumulation, production, and economic growth in a power-driven capitalist system. Specifically it synthesises the role of hierarchical power processes, unfolding as breadth (productive expansion, M&As, globalisation), and depth (co-cutting, stagflation). Finally, the potential for moving beyond the capitalist mode of power by dampening the confidence of dominant capital groups in their ability to maintain their power and the continuity of the key process of capitalisation is addressed.

By connecting these elements of dynamics, the chapter has laid the groundwork for a comprehensive understanding of the interplay between degrowth transformations and the capitalist mode of power. This understanding, enriched by the holistic lens offered by CasP, serves as a valuable foundation for future research and action, as it helps identify potential points of leverage and resistance in the ongoing struggle for a more equitable, sustainable and democratic society.

While general interactions between degrowth transformations and the process of capital accumulation have been analysed, the next chapter will delve more precisely into the processes (or modes) of sabotage. It will seek to better understand how socio-ecological transformations are hindered and limited within capitalism, examining how social life is continuously shaped by capitalist power and how society can resist it from below. In doing so, the next chapter will explore the intertwinement between the multifarious degrowth logics of transformation and capital. This exploration will ultimately contribute to a more nuanced understanding of strategic sabotage in the context of socio-ecological transformations.

4 Trouble on the paths of socio-ecological change

“To understand the disorders or manifestations that accompany our drift between a known world and a universe we do not yet perceive, new concepts are needed: irreversible mutation suggests a complexity that our knowledge is not prepared to explain...”

— Jean Duvignaud (1973, p. 8, mt)

4.1 Introduction

The degrowth community has put forward a wealth of innovative ideas for what changes could enable a well-being for all within planetary boundaries. But *the path to achieving these changes* remain largely shrouded in mystery. Recognising this, degrowth scholars and activists have been emphasising the importance of strategic reflection, as evidenced by the 2020 “Degrowth and Strategy” conference organised by Degrowth Vienna, and the subsequent collective book (Barlow et al., 2022). Echoing previous degrowth scholars (Demaria et al., 2013; Parrique, 2019; Schmelzer et al., 2022; Schmid, 2021), Barlow and colleagues propose that degrowth fosters an array of socio-ecological change pathways spanning different geographical and temporal scales. These pathways encompass: the establishment of alternative practices and organisations, such as a diverse range of “nowtopias” striving to implement broader changes they envision; the transformation of existing institutions through well-designed policies and engagement in political instances; and oppositional activism that aims to disrupt contested activities via confrontation, including protests, civil disobedience, and other conflict-driven actions.

However, these modes of transformation are only one side of the picture. As argued in Chapter 3, socio-ecological change is entangled with the process of differential accumulation. Following the Capital as Power (CasP) perspective, described in the previous chapter, socio-ecological transformations face the varying capacity of dominant corporate-government coalitions to govern, alter, and restructure society against multiple

oppositions. Power and opposition to power, Nitzan and Bichler argue, are dialectically intertwined: “without power there could be no opposition to power, and without opposition to power, whether blatant or latent, there would be nothing to exert power over in the first place” (Bichler & Nitzan, 2020a, p. 2). In an infinite cycle, capitalist power and oppositional forces imply, contradict, and shape each other. This suggests that degrowth pathways should unfold out of a tension between forces of socio-ecological change and the trajectories tentatively imposed by corporate-government coalitions.

This dynamic calls for an examination of how socio-ecological transformations are hindered, limited within capitalism. In this regard, the theory of CasP introduced in Chapter 3 is not sufficient. It is not a general theory of society, its authors insist. Looking at the dynamics of the powerful, they examine capitalism from the *top down*. Their attention is especially given to the process of capitalisation, which “embodies the beliefs, desires and fears of the ruling capitalist class” (Nitzan & Bichler, 2009, p. 19). This process reflects the quantitative side of capitalist power, whereas the wide-ranging forms of *strategic sabotage* represent its qualitative side (see Section 3.3.3). However, Nitzan and Bichler do not offer a theory explaining the processes through which social life is continuously shaped by capitalist power, i.e. sabotaged, and how society can resist it, from below (Di Muzio, 2015b). Specifically, it leaves plenty of room for examining the trouble faced by degrowth transformations within capitalism.

To fill this gap, I attempt, in this chapter, to build a theoretically grounded typology of possible modes of sabotage of degrowth transformations. The objective is to offer a more precise and nuanced conceptualisation of strategic sabotage when applied in the context of socio-ecological transformations. By identifying key dimensions that distinguish processes of sabotage, I attempt to reduce the complexity of the concept and potentially help inform future empirical applications. For this purpose, I explore the intertwinement between the multifarious degrowth logics of transformation and capitalism with a social theory called *Social Practice Theory (SPT)* or simply *practice theory* (Reckwitz, 2002; Schatzki, 2002; Shove et al., 2012). Indeed, as argued by Boonstra and Joosse (2013), social theories “can help to structure thinking about the many possible and impossible ways in which degrowth can develop” (p. 173). SPT allows us to see how social life is continuously transforming, without relying on an atomistic view of rational individuals motivated by self-interest or ultimately determined by

relations of production. Furthermore, SPT is flexible enough to depict transformations from smaller to larger scales, which are all key to degrowth.

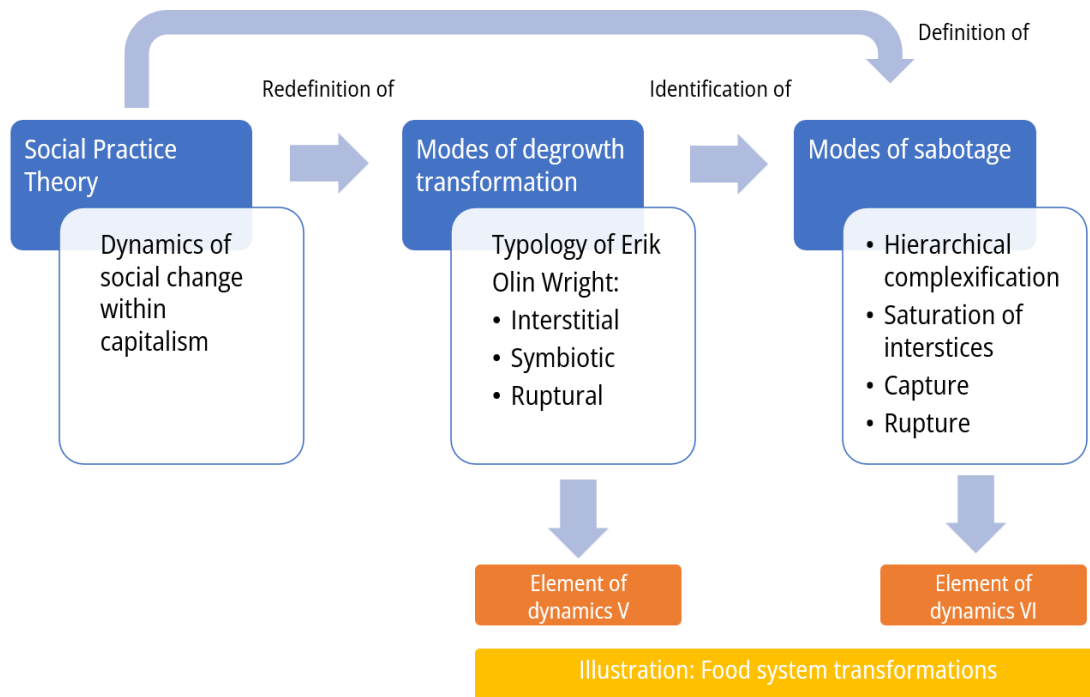


Figure 10. Method for the refinement of the typology of modes of degrowth transformation and generation of the typology of modes of sabotage

As shown in Figure 10, once the groundwork has been laid for SPT, the next step draws on Erik Olin Wright’s typology of modes of transformation (or strategies): ruptural (oppositional activism), interstitial (new practices and institutions), and symbiotic (reforms and compromises) transformations. While SPT provides the “ingredients” of social change, while Wright’s typology offers the recipes.

This typology has been growing increasingly popular in the degrowth literature in recent years, in the context of thinking about strategies (Bardi et al., 2021; Barlow et al., 2022; Chertkovskaya, 2020; D’Alisa & Kallis, 2020; Petridis, 2016; Schmid, 2021). Degrowth scholarship has mostly focussed on the articulation between interstitial and symbiotic modes of transformation – just like Erik Olin Wright himself. However, the most recent contributions on degrowth strategic thinking (see Barlow et al., 2022) and especially Chertkovskaya (2022) insist on the necessity to also reflect on the role of ruptural transformations.

I then describe these modes of transformation using SPT to refine the potential processes at play. The assemblage of SPT and Wright's typology of modes of transformation gives these transformations meaning and conceptual precision.

This enables the following step, in which I hypothesise four *modes of sabotage* which inhibit the modes of transformation put forward by the degrowth community. I call them respectively *hierarchical complexification*, *saturation of interstices*, *capture* and *rupture*. With this perspective, I attempt to contribute to a better understanding of the trouble faced by movements in line with degrowth and of their capacity to transform capitalist societies. Finally, to show their relevance, I illustrate the use of these concepts with reference to studies on the transition to sustainable food consumption.

The chapter is structured as follows. In Section 4.2, I offer an overview of SPT, focussing on the key elements used in the remainder of the chapter. Then, Section 4.3 recasts Erik Olin Wright's ruptural, interstitial and symbiotic modes of transformation from an SPT perspective. Then four modes of sabotage are conceptualised in Section 4.4. In Section 4.5, I illustrate the typologies of modes of degrowth transformation and of sabotage with examples related to the transition to sustainable food consumption. Section 4.6 concludes the chapter with suggestions for further research.

4.2 The dynamics of social change under capitalism

SPT offers a complex perspective on how society changes from the bottom up, by focussing on how people's everyday activities are shaped by the social, cultural, material, and historical contexts in which they live – including on how capitalism forms our lives (Jaeggi, 2017, 2018). By doing so, it moves beyond a variety of classical dichotomies in social research, such as actor/structure, mind/body, ideational/material, micro/macro, base/superstructure (Welch & Yates, 2018).

What is particularly useful for the present inquiry is that SPT sheds light on processes resisting change and conversely, on the alteration of persisting capitalist processes. Indeed, socio-ecological transformations entail the emergence and the stabilisation of a variety of new practices as well as the dismissal of capitalist, growth-oriented ones. Therefore, with this approach, it is possible to develop a better understanding of the trouble faced by degrowth but also of the possibilities for transformation from within capitalism.

SPT is still minor in degrowth scholarship but it has increasingly been used to make sense of the various ways of experiencing degrowth today (Boonstra & Joosse, 2013; Brossmann & Islar, 2020; Büchs & Koch, 2019; Jarvis, 2019; Joutsenvirta, 2016; Koch, 2020a; Schmid, 2020; Schmid & Smith, 2021; Smith et al., 2021). Schmid (2019) uses this approach in combination with Erik Olin Wright's (2010) typology of modes of transformation to refine degrowth logics of transformation – but with a focus only on interstitial and symbiotic transformations. However, SPT has not yet been used to investigate their hindrance and limitation – or *sabotage* – by capitalists.

As a prerequisite, this section offers an outline of SPT and its key elements. First, it provides a general overview and its definition (Section 4.2.1). Then, it describes the dynamics of social practices from their underlying elements (Section 4.2.2) to the bundles and complexes they can form (Section 4.2.3). Section 4.2.3 shows that SPT moves beyond the micro/macro divide and is relevant to both small and large phenomena. In Section 4.2.5, the *circuits of reproduction* explaining both stability and change are described. Section 4.2.6 shows how SPT can improve our understanding of change under capitalism. Section 4.2.7 examines how practices can intentionally be shaped. Finally, the non-linearity of change is discussed in Section 4.2.8.

4.2.1 Social Practice Theory: Definition and overview

Reckwitz (2002) asserts that theories of practice have emerged from the works of various writers, such as Giddens, Garfinkel, Taylor, and Schatzki. SPT is a way of thinking about how social people, with their different motivations and purposes, create and modify the world in which they live. A key common assumption in theories of practices is that social structures and human agency are shaped recursively. Due to the breadth of applications, there is no such thing as a unified practice theory. Rather, there are lines of thought that share the same ontological foundation: for practice theorists, the fundamental unit of analysis is the practice itself, and the social world is viewed as composed of practices (Schatzki, 2002). From this viewpoint, the social-legal-historical institutions governing society – which are valued through the process of capitalisation (see Chapter 3) – reflect an ever-changing configuration and combination of social practices.

The concept of *practice* is used in a variety of disciplines, including philosophy, history, sociology, and social and cultural anthropology, to describe human action in

society. One of the most cited definitions of a social practice in the contemporary literature is offered by Reckwitz:

“a 'practice' [...] is a routinized type of behaviour which consists of several elements, interconnected to one other: forms of bodily activities, forms of mental activities, 'things' and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge. A practice – a way of cooking, of consuming, of working, of investigating, of taking care of oneself or of others, etc. – forms so to speak a 'block' whose existence necessarily depends on the existence and specific interconnectedness of these elements, and which cannot be reduced to any one of these single elements.” (Reckwitz, 2002, p. 249)

Practice theoretical perspectives shift the focus of analysis both from the individual actor and from the societal totality to social practices. By doing so, SPT has the analytical capacity to avoid thinking of social processes as the sum of individual and disarticulated actions. In contrast to common assumptions in economics, SPT considers that rational individuals acting always intentionally are unlikely to be found. In that sense, free will alone is not capable of effecting societal change. Social practices are locations where individuals conduct their daily activities, supported, and restricted by social structures. As people perform their actions, these structures are re-enforced and legitimised. It suggests that social actions are not the mere reflections of individuals' ideals, meanings, or attitude, but the expressions of social and cultural customs, common ways of responding in certain situations, and socially acquired skills which lead them to behave in a particular manner. For Warde (2005), they “contain the seeds of constant change [...] as people in myriad situations adapt, improvise and experiment” (p. 141). Practices as social patterns of activity serve as a link between people or groups and socially constructed institutional and material circumstances, nature, resources, social meanings, and norms.¹⁰¹

Shove et al. (2012) distinguish practices-as-entities and practices-as-performances. The former relates to a particular social pattern, i.e. a process that evolves but endures. It

¹⁰¹ Note that contrary to common criticism, individuals do not cease to exist in practice theory. Social practices shape the contexts in which individual action takes place (Welch, 2016). However, it is through the active integration of the elements underlying practices by individuals that these social practices come to life and persist. Individuals are skilled agents who can actually negotiate and perform various practices in their daily lives (Shove et al., 2012; Warde, 2005).

can be recognised and spoken about as a combination between a set of elements. Contrastingly, a practice-as-performance refers to an immediate and particular instance of such a pattern – it may be viewed as a form of what process philosophers call “events”, which are the basic units of processes. Indeed, practices develop and are kept going by performing them repeatedly. For example, an organisation embodies many practices – e.g. joining team meetings, realising typical tasks, paying wages, taking coffee breaks – that may be repeated almost like rituals. It is thus through these successive performances that the interdependence between elements endure and that a practice-as-entity is sustained. In the remainder of this chapter, except when explicitly mentioned, the term *practices* refers to *practices-as-entities*.

Finally, these practices are entrenched in spatio-temporal contexts, meaning they are associated with particular locations and times, rather than describing abstract or universal patterns of activity. For instance, eating breakfast is a social practice that occurs in the kitchen at a certain time in the morning. Not only are social practices tied to material and temporal settings, but they are also impacted by the surrounding social relations, meanings and competences.

4.2.2 Elements: Material objects, meanings and competences

Practices are conceptualised as entities composed and held together by sets of connected elements. These elements are “ingredients of practices and points of connection between them” (Shove et al., 2012, p. 122). Whereas the first theories of practice typically focussed on social aspects, such as meanings and norms, modern ones – especially Schatzki (2002), Reckwitz (2002), Warde (2005) and Shove et al. (2012) – have additionally recognised the critical role of material aspects in shaping social life – finding in that some common grounds with Latour’s Actor Network Theory (Spaargaren et al., 2016). However, practice theorists describe all these elements in their respective frameworks differently.

Schatzki (2002) suggests that practices are sustained by practical understandings (knowing how to act), rules (instructions and principles), teleoaffective structures (purposes, beliefs, emotions) and general understandings (widespread meanings, or ideational elements shared by a number of practices; Welch & Warde, 2016¹⁰²). Linked to

¹⁰² For example, Smith et al. (2021) see degrowth as an *emerging general understanding*. However, it seems reductive to me; degrowth might be better seen as a mosaic of social practices.

these elements, Schatzki identifies a crucial role for *material arrangements*. Warde (2005) uses different terminology but proposes a set of elements very close to those from Schatzki (Gram-Hanssen, 2011).

In the work of Shove et al. (2012), however, practices emerge through the integration of three kinds of elements: materials, meanings, and competences. Material objects, bodily activities, technologies, tangible, physical items, and the raw materials, integrated with other elements, are crucial for explaining the social world. Like Latour (1992), SPT considers the multiple material infrastructures and devices that are used in today's society as intertwined with what we do. As Schatzki explains, these material elements “are in some sense crystallisations of matter-energy flows” (2010, p. 137). Material objects are inherently linked to the other dimensions of practices.

For their part, symbolic or shared meanings, emotional states, values, ideas, social conventions, imaginaries, cultural traditions, concepts, personal and collective expectations are all examples of what Shove calls *meanings*. They arise from the idea that what we do necessarily involves mental representations, which shape and are shaped by the practice as a whole. Although Cornelius Castoriadis (1975) is not cited directly by Shove, meanings may comprise his notion of imaginary signification. Rather than just responding to external stimuli, Castoriadis argues that humans have the unique potential to assemble and impose meaning on their experiences and the world around them. This act of assembling meaning is referred to as imagination. It enables people, individually and collectively, to develop their own identities, values, and beliefs. In this sense, the social imaginary is not fixed or given, but is constantly in flux and subject to change. It is influenced by a range of factors, including material conditions, political and cultural structures, and the ideas and values of its members. In that context, the ideology of growth is a set of meanings, that is tightly connected to the materiality of growth, as well as the competences without which capitalist activities would not be possible.

Competences include skills and knowledge as well as the ability to use those skills and know-how. For example, the social practice of cooking might be related to knowledge and skills about sustainable food. These elements can also serve as a *glue* that holds practices together. For example, the practices of riding a bike and repairing it might be linked through material and meaning elements, though they require different sorts of skills. The idea that possessing material resources alone is not sufficient to undertake activities – contrary to what most economic models assume – is reminiscent of some

aspects of the capabilities approach, proposed by the development economist Amartya Sen (see Robeyns, 2005). He contends that one person's ability to live a good life relies on their capacity to transform all sort of resources (material and immaterial) into freedoms – a capacity depending among other things on knowledge, education and skills.

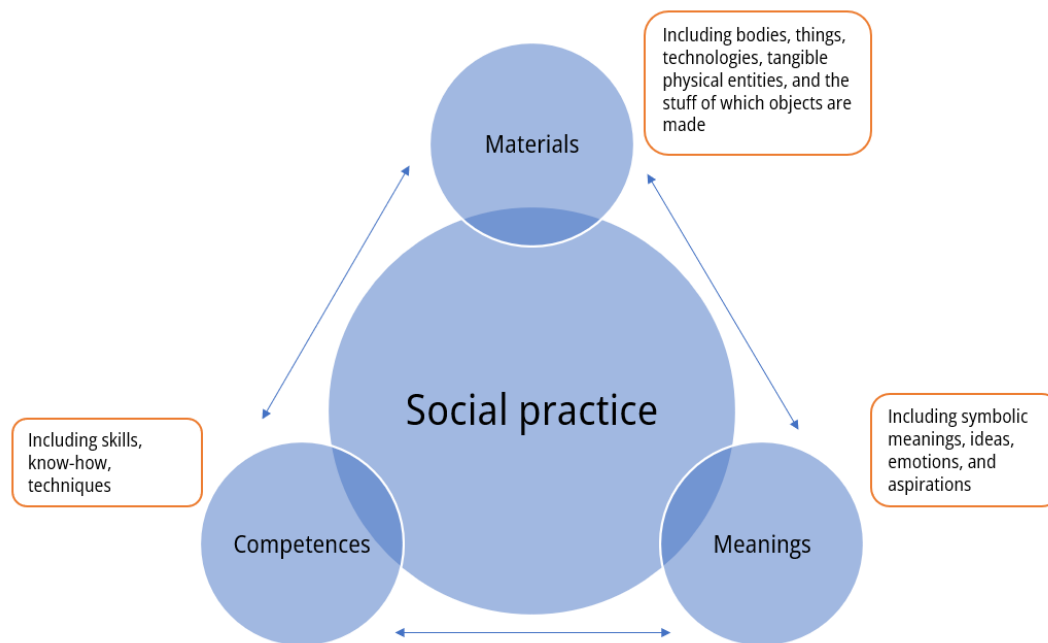


Figure 11. Shove's three-element framework. Adapted from Shove et al. (Shove et al., 2012, p. 14)

Therefore, the dynamics of social practices cannot be well understood by focussing on one type of element. The shaping of meanings must be understood as part of the socio-material totality of everyday life, in relation with other types of elements and the broader plenum of practices rather than in an isolated symbolic or discursive sphere. In other words, ideas do not produce ideas alone: material aspects and know-hows, relations between practices, at the very least play a role in the process – and vice versa. A practical consequence is, for instance, that it is impossible to assume a linear relationship between providing information, persuading and acting. Rather than attributes of individuals, elements are qualities of practices, in which individuals participate (Reckwitz, 2002, p. 250). This allows, for instance, environmentally destructive practices to be analysed not as the result of intrinsically greedy and selfish individuals, but rather as entities resulting from the ties between specific materials, meanings, and competences, which were able to recruit individuals to participate in them. Likewise, sustainable habits are not necessarily the work of virtuous individuals. Rather they result from the recursive

relation between practices and the agency of practitioners, who had the ability to put together a series of specific elements.

These elements allow then the emergence, transformation, and diffusion of practices to be described: “If practices are to survive they need to capture and retain practitioners willing and able to do this integrating [of elements] and therefore willing and able to keep them alive” (Shove et al., 2012, p. 120).

The way elements circulate and become available to individuals is quite different from one element to another. Meanings can circulate locally to globally via social media, from tongue-to-tongue, through books, friendship, art, advertisement, business relations, or activism, for instance. Knowledge and skills can also emerge and diffuse in many ways. Some materials are capable of circulating, such as a bicycle spare part, others not – e.g. a living tree. Obviously, all elements of practices are not evenly distributed and accessible. According to the social class you belong in, your financial resources, your everyday rhythms, your education, your geographical location, the beliefs you are exposed to, you have easy access to a distinct set of material resources, aspirations, knowledge, and skills, and thus can participate in a limited set of practices. Consequently, inequalities in the capacity to perform practices may be due to a lack of access to the various kinds of elements to integrate – suggesting, for instance, that studying inequalities based solely on material aspects would reveal only a limited part of the picture. Furthermore, links and connections between elements and between practices reflect and sustain inequalities (Shove et al., 2012).

4.2.3 Bundles and complexes

Interwoven social practices constitute the fabric of the social world, and in this sense are necessarily interconnected (Schatzki, 2002). Therefore, social practices are difficult to address independently. As Nicolini (2012) argues, “practices can only be studied relationally, and they can only be understood as part of a nexus of connections” (p. 229). Practice theorists have referred to these interrelations, or *nexuses* (Hui et al., 2016), with different concepts. Whereas both Schatzki and Shove use the term of *bundle of practices*, a second collection of interrelated practices is termed *complexes* by Shove and *constellation* by Schatzki – these terms are used interchangeably (Hui et al., 2016). Schatzki (2016) describes constellations as nexuses of bundles, or simply larger bundles. Shove et al. (2012) clarify the difference between a bundle and a complex of practice by

emphasising the character and density of the links involved. Bundles of practices are “loose-knit patterns based on co-location and co-existence” (Shove et al., 2012, p. 17). The main aspects that are shared are time- and space-related characteristics of practices. Through their other aspects, bundles are loosely integrated. Therefore sometimes, practices can co-exist but evolve relatively independently from one another. For example, bicycling and then taking a shower can be two practices of someone’s daily routine, while it is still possible to perform both independently.

In other cases, closer forms of co-dependence can emerge. When they do, bundles become *complexes*. Complexes of practices embody “stickier and more integrated arrangements including co-dependent forms of sequence and synchronization” (Shove et al., 2012, p. 17). For instance, running a cooperative supermarket involves a set of practices such as cashiering, restocking shelves, bookkeeping, shopping, which are highly dependent on each other. Similarly, a corporation can be thought of up as a complex: it is made of the interaction between a multitude of practices, including administrative, legal, productive, financial, strategic and organisational ones. However, from the outside, it can be recognised as a single entity and given some aggregate attributes, such as a capitalisation. In complexes, practices can be hard to separate due to their functional integration. Bundles and complexes are illustrated in Figure 12.

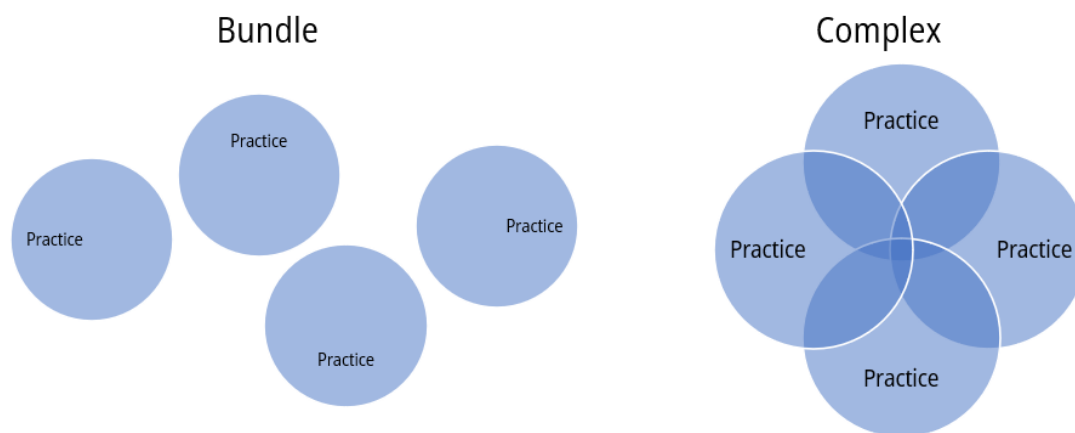


Figure 12. The difference between a bundle and a complex of practices

Inspired by complexity studies and ecological systems thinking, Shove and Pantzar suggest that complexes can be thought of as systems, where some practices have a positive influence on others and negatively affect the development of others:

“For example, one might imagine identifying and analyzing chain reactions between practices in terms of autocatalytic feedback cycles animated by concatenations of positive influences, such that one item in the chain catalyzes another. For example, if practice A increases the probability that practice B will emerge and persist, and practice B stands in the same relation to practice A, the two practices mutually enhance each other's rates of replication.” (Shove & Pantzar, 2010, p. 12)

Such relations between practices illustrate the competition that can occur between them, where the rise of some depends on the decline of others, and vice versa – for example, the spread of vegetarianism in a group of people is carried out to the detriment of more meaty diets. Competitions between practices may take place at several levels, such as time, space, and symbols. Indeed, since days are made of 24 hours, the time of practitioners is a scarce resource that may be disputed (Vaara & Whittington, 2012). Competition also occurs for the physical space, e.g. think of the road to be shared between cars, bicycles, and pedestrians. SPT also underlines contradictions in the symbolic realm, where competition occurs “between discourses of safety, health, responsibility, convenience and status” (Watson, 2012, p. 493). The competition between the discourses of green growth and degrowth (Sandberg et al., 2019) offers a good illustration of this type of process.

If we think of practices interconnected as in a system, it becomes obvious that these competitions are not a struggle between two isolated practices but embedded in the web of relations the practices are part of. For example, the rise of bicycles may depend on the infrastructure built following a local mobility policy, and on material constraints emerging from high fuel prices at a global level.

4.2.4 Circuits of reproduction

SPT contends that human actors act on and contribute to shaping society by performing social practices. Social change is thus understood through the rise, stabilisation, and decline of practices (Spaargaren et al., 2016). Practices – whether considered individually or amalgamated – are constantly changing; they emerge, evolve, and break apart all the time (Shove et al., 2012). The continuous transformation of society is thus seen as an emergent and polycentric phenomenon (Shove & Walker, 2010).

Giddens tackles the issue of how available elements and social practices change, by introducing the concept of a “reproduction circuit” (Giddens, 1986, p. 191), which Shove et al. (2012) borrowed later. They suggest three distinct circuits. First, through

changes in the elements that make up a practice and their relationships; this comes from the observation that elements may grow, change, and disappear together. For example, the ability to cook a particular type of vegetable – let's say a local variety of parsnip – is interrelated with its material availability, and a specific meaning, such as about a reason to cook this vegetable. This means that the repeated performance of a practice tends to support the elements on which it is built – which evolve together. Similarly, changing the availability of elements that can be integrated may transform or phase out practices. For example, if someone cannot buy parsnips because the shops around do not sell them, this person is less likely to develop cooking skills related to this vegetable and diffuse positive thoughts about this sweet and vitamin-rich vegetable.

A second circuit of reproduction suggests that stability and change depend on how practices hold together, how practices, bundles and complexes relate to each other. A complex involves co-dependent practices participating in their own regeneration. The continuous relations between practices can lead to stable processes – such as established lifestyles (Pantzar & Shove, 2010) – or may progress toward extinction (Pantzar & Shove, 2006). Consequently, complexes of practices are transformed or reproduced through recurrent relations, and at the same time, these relations shape the reproduction and regeneration of particular practices, as well as those of their underlying elements (Shove & Pantzar, 2010). For example, the practice of commuting every day influences the way one practices grocery shopping and the time one has to perform other practices – such as taking care of one's children or gardening.

The third circuit is related to the evolution of practices into future ones. The practices that make up society are indeed the successors of previous practices, and this path-dependent process follows temporal dynamics. In other words, the practices undertaken by individuals in their lives influence their ability to participate in new practices (Shove et al., 2012). This (partially) explains why changing lifestyles toward radically different ones involves challenging processes.

These circuits of reproduction underline that changing practices is both possible and tricky. Shove et al. (2012) identify five kinds of strategies to shape practices, drawing on their conceptualisation of the circuits of reproduction: (1) influencing the reproduction and availability of elements underlying practices – i.e. materials, competence, and meanings; (2) subverting the positive feedback that some practices offer to the practices they seek to phase out; (3) making it easier for people to join desirable and leave

undesirable practices; (4) reordering the social connections that keep undesirable practices in place or through which practices spread (and people join or leave); and (5) making it possible for desirable practices to recruit more participants (Shove, 2010a).

Particular dynamics within the circuit of reproduction can lead to what I call a “gap”, which allows transformations. A gap within social practices or complexes can be seen as an absence or deficiency in crucial elements or connections. This may lead to inconsistencies, inefficiencies, or the decline of a practice or complex. Gaps can arise from missing or underdeveloped elements, weak connections, limited reproduction and regeneration, contradictory meanings or discourses, and material artefacts’ availability.

On the whole, SPT sees stability and change as dynamic processes. A seeming inertia is the result of interlocking (complexes of) practices, with specific circuits of reproduction. Consequently, some can impose themselves over others and become prevalent – they are called “dominant projects” by Pred (1981) and Shove et al. (2012). But thinking in terms circuits of reproduction suggests that nothing prevents these dominant projects, such as those emerging from capitalism, from faltering and being replaced by other practices.

4.2.5 From small to large phenomena

Modern practice theory has often been used to study *small* phenomena in everyday life, such as showering (Pink & Mackley, 2015), Nordic walking (Shove & Pantzar, 2005), or cooking (Herington et al., 2017). However, arguably it still has the potential to explain many widespread and spatially extensive processes, including power, governments, adaptation to climate change and transformations of capitalism (Jaeggi, 2018; Schmid & Smith, 2021; Shove, 2010a, 2014; Watson, 2017; Welch, 2016). In principle, social change at any scale could be explained in terms of changes in practices. Indeed, according to Schatzki (2016), interrelated practices – such as *bundles*, *complexes* and *constellations* – are the basic elements of social phenomena,¹⁰³ whether large or small. Hence, most practice theorists think of society as a *plenum*, a *gigantic maze* of social practices: “In it, relations among practices [...] form arrays that can be thinner or thicker, more compact or spread out, continuing and fleeting, and patterned or scattered” (Schatzki, 2016, p. 6).

¹⁰³ Social phenomena are defined here as any types of interaction that involve human coexistence (Schatzki, 2016).

Social phenomena are thus specific parts of the practices' plenum, characterised by varying forms of interconnections – e.g. of different sizes, density and complexities.

In this sense, Schatzki argues that *small* and *large* phenomena are fundamentally similar; they are made up of multiple interconnected practices. Hence, large phenomena can be researched and analysed without recourse to *higher levels*¹⁰⁴ with specific dynamics or rules, or through a divide between macro and micro processes:

“A ‘large’ social phenomenon is one that is spatially extensive, consisting in a far-flung constellation of practices or arrangements [...]. Size is not the same as either complexity or number and organization of elements. A small social phenomenon such as a particular face-to-face interaction transpires at a particular place and might include only one or two practices, whereas a family's life embraces considerably more episodes and bundles that are farther spread out in space, and the contemporary international financial system embraces episodes and bundles that are even more spatially far flung (though not as extended in time as the family).” (Schatzki, 2016, pp. 6–7)

Shove (2019) shows that this idea also emerged outside of SPT, notably with Sayer who sees the economy “as a complex set of relationships between people, increasingly stretched around the world, in which they act as producers of goods and services, investors, recipients of various kinds of income and as taxpayers and consumers” (Sayer, 2015, p. 19). Similarly, Callon (1998) and MacKenzie (2006) argue that the various forms of governance and market exchanges do not merely affect practices, rather they also *are* practices. This means that implementing policies, changing the way society is governed implies transformations in social practices by other social practices. As will be elaborated in the next section, economic practices and institutions can be conceived as a subset of the plenum of practices – i.e. practices being interlinked with other practices (Jaeggi, 2018).

¹⁰⁴ This distinguishes practice theory, for example, from the Multi-Level Perspective (Geels, 2002), which is popular in sustainability transitions research. The latter understands transitions as the interactions of niches, regime and landscape, which develop according to (interrelated but) distinct dynamics. It does not mean, though, that empirical levels cannot emerge and be analysed as such with practice theory – e.g. from local to global levels. However, the same concepts from practice theory apply to study their respective dynamics.

4.2.6 Capitalism in practice

SPT has been rather quiet when it comes to analysing the development of capitalism (Schmid & Smith, 2021; Shove, 2010b). However, the philosopher Rahel Jaeggi (2017, 2018) offers a foundational counter-example.¹⁰⁵ According to her, capitalism must be understood as a set of practices to fully grasp how it forms our lives. From this perspective, the so-called *economic* processes such as production, consumption, the market, work, money and even the whole economy must be recognised as composed of a variety of social practices. In a similar way to the idea of *escaping the economy* (see Chapter 2), she consequently embraces the dissolution of the border between, on the one hand, an economic sphere, supposedly governed by self-referential non-normative economic laws, and, on the other hand, extra-economic aspects, such as culture, power, politics and ecology. An economic sphere cannot be distinguished within social practices *as a whole*:

“Among the basic orientations that we might have to re-examine, then, is the widespread concentration of critical efforts – within critical theory as well as within other discourses critical of capitalism – to protect certain spheres (cultural, social, personal) from contamination by the supposedly separate economic sphere. Economic practices, according to this view, do not merely rely on or are ‘embedded’ in a surrounding or enabling ethical form of life; they are rather part of the form of life itself and its respective dynamic.” (Jaeggi, 2018, p. 123)

In this way, even when they seem exceedingly prevailing, the so-called *economic* practices remain interwoven with the rest of the socio-ecological world. For example, instead of being reduced as a *factor of production* (see Chapter 2), labour is then seen as “a far richer activity, composed of a variety of attitudes and symbolic and communicative skills, and marked by habits, customs, and embodiments, and is to be understood only within a broader social context” (Jaeggi, 2017, p. 171).

Another example is nothing less than *capitalisation* (see Chapter 3). This key process to capital accumulation is often described by CasP theorists as a *ritual* or a *habit* of capitalists (Fix, 2021a; Nitzan & Bichler, 2009, pp. 197, 203). When synthesising CasP and SPT, capitalisation can logically be thought of as the central (kind of) practice within

¹⁰⁵ See also Schmid and Smith, who use practice theory to analyse postcapitalist initiatives (Schmid, 2021; Schmid & Smith, 2021).

capitalism. It is a routine deeply inscribed in the sociality of the capitalist world. Furthermore, capitalisation has a *meaning* element, i.e. “envisaging the value of something in terms of an investment [... and] assessing the expected future monetary return from investing in it” (Muniesa et al., 2017, p. 11). In their anthropological study on capitalisation, Muniesa et al. (2017) argue that capitalising involves a *scenario* – of how profits will come about – and a *gaze* – the point of view of the investor which should be adopted by the people who will be “making sense of the value of things in their day-to-day jobs and directing that value in a particular direction” (p. 133), as well as by business and government organisations acting in conjunction with the investor (to create value). It also requires a material context: from the materiality of the process being valued to the available data and devices used to value. Obviously, the practice of capitalisation is also based on specific skills – basic to sophisticated competences in this regard, which have been extensively developed by the world of finance. A wide range of discounting methods are commonly used by financial analysts and asset managers to evaluate the financial worth of any kind of activity (see e.g. Harrington et al., 2021).

Capitalist practices constitute a continuum of practices that are loosely to tightly co-dependent on capitalisation and differential accumulation¹⁰⁶ (see Section 3.2.3). All types of practices which contribute to generate or influence flows of profits are likely, sooner or later, to be interconnected with the practice of capitalisation. In some cases, capitalisation is so tightly linked to a practice that profit-making appears as almost its sole purpose, such as stocks trading or real estate investment. Furthermore, many practices that are not directly influenced by capitalisation may be dependent or constrained by the web of relations established between capitalist practices: “the alignment, for instance, of practices of production, distribution, and regulation through price, profit-interests, and property relations produces constraints and possibilities for the material sustenance of society” (Schmid & Smith, 2021, p. 261). Therefore, as a dominant practice, capitalisation has potentially suffused all parts of society. However, the degree to which and the way it infuses in concrete institutions largely depends on the complexes formed, which is context dependent.

¹⁰⁶ Non-capitalist practices can be symmetrically defined as a continuum of practices that are weakly to strongly independent from capitalisation and differential accumulation.

Like other social practices, capitalist practices rely on the integration and co-evolution of material elements – such as money – but also meanings and competences. From this perspective, for instance, the *ideology of growth*, a set of meanings claiming that unlimited economic growth is desirable and sustainable (Latouche, 2009a) does not progress in the sole realm of ideas. It develops together with what could be called respectively the *materiality* and the *mastery of growth*. This perspective bridges the old divide between culture and materiality/structure: one is not subject to or more important than the other; degrowth transformations cannot avoid acting on both fronts. But how can the trajectory of social practices be influenced?

4.2.7 (Un)intentionality, governance and power

To consider the possibilities of change under capitalism, some explanations are necessary regarding how power shapes practices, notably with the concept of *practice hierarchies*. Indeed, it is far from obvious since practices are only partially owing to the willingness of those who engage in the practice.

Some practices are designed or guided intentionally, through deliberate actions, at the individual or collective level. However, many of them emerge without coordination or explicit purpose (Jaeggi, 2018; Smith et al., 2021). When practices – with diverse degrees of intentionality – intertwine and form bundles or complexes/constellations, they may attain their own dynamic and take on a life of their own – a dynamic that is not always easy to grasp (Jaeggi, 2018). This contributes to partial indeterminacy, and the *magmatic* nature of society (Castoriadis, 1975/1998).

Social practices are never imposed once and for all and always in continuous evolution; however, it is possible to influence the availability and distribution of elements to favour the emergence of particular practices and of co-dependence to tentatively produce outcomes. Such a kind of governance can be undertaken through infinite means by various forms of entities, of all sizes, whether formal or informal: from the family level to the activist movement, legislative bodies, government apparatuses or international organisations. In other words, practices can be governed (Schatzki, 2014).¹⁰⁷

¹⁰⁷ Strengers and Maller offer concrete examples: “The list of possible means of governance is long and includes incentives, propaganda, publicisation, education and training, campaigns and proclamations, norms and standards, persuasion and rhetoric, laws, orders and regulations, policies, programmes and initiatives, exemplifying desired activities or bundles, altering arrangements, introducing new materialities, organising objective spaces, and, of course, fear, threats and the use of force or violence. Some instances of

However, how can they be governed? This requires understanding of how power unfolds. Remember, that following Nitzan and Bichler (2009), I consider *power as confidence in obedience*, i.e. in the capacity of some ruling group to shape the world while facing opposition (see Chapter 3). Power has rather been little addressed in SPT so far (Schmid & Smith, 2021). But for Watson (2017) power “must be understood as an effect of performances of practices, not as something external to them” (p. 171), which is compatible with the idea of power as an emerging relationship, rather than a resource to be used. Following Wartenberg (1990), Schmid and Smith suggest a “dynamic and relational conception [of power] that transpires through the constant unfolding of the social” (2021, p. 261): they view power as the outcome of particular *alignments of practices*, or as I would call them, *practice hierarchies*. These *hierarchies* refer to the ways in which practices relate to each other: practices can support or hinder each other. Practice hierarchies are not fixed but dynamic; they funnel and amplify social change in specific directions, while limiting and inhibiting other options: “Some practices are heavily dependent on the organization of others. They may be effectively subordinated to others, or highly inter-dependent within larger configurations or fields (e.g. economic, material, temporal, spatial)” (Warde et al., 2017, pp. 35–36).

Therefore, together, practice hierarchies give shape to the capitalist order. If we picture the set of ever-changing power relations like a *river*, each change is like a change in river’s topology – in practice, hierarchies which influence, whether significantly or not, the overall flow of the river. The confidence of dominant capitalists over their capacity to shape the world – or control the direction and shape of the river’s flow – comes from specific hierarchies, which emerge from the dialectics between imposition and resistance. Eventually, the distribution of power within society depends on these chains of co-dependence.

From this perspective, the ways in which practices are aligned and hierarchised determine the possibilities for degrowth and other non-capitalist practices to flourish:

“The alignment, for instance, of practices of production, distribution, and regulation through price, profit-interests, and property relations produces constraints and

governance involve imposition, one classic large-scale version of which is central planning and administration. Many instances of governance, however, are not forms of imposition but instead cases of inducing, setting the stage for, or otherwise affecting bundles and constellations whose composition and trajectory result from what is variously called self-organisation, spontaneity or mutual adjustment (cf. Hayek 1960)” (2014, p. 20).

possibilities for the material sustenance of society. The power relationship between capitalist and non-capitalist forms of material sustenance, then, can only be understood when taking into account the ways in which different alignments condition livelihood options [...] Capitalism per se does not have power over non-capitalist practices. However, within capitalist social relations, practices are aligned in ways that impede some non-capitalist forms of sustenance and thus limit the options for non-capitalist production and distribution” (Schmid & Smith, 2020, p. 9)

From this viewpoint, the degrowth transition¹⁰⁸ is a change in practice hierarchies “*towards a degrowth trajectory following breaks, substitutions, and shifts of dominant patterns in practices’ relatedness*” (Schmid, 2021, p. 128). A key challenge relates to the reproduction of the various elements of practices – materials, meanings, competences. For example, at the ideological level, degrowth remains largely ignored or taboo in many contexts. In practice terms, this means that the *circuit of reproduction* of degrowth as a meaningful idea has been ineffective or even sabotaged. In reaction, degrowth activists, by relentlessly trying to convince people of the necessity and possibility of degrowth, are trying to repair or extend this reproduction circuit – while hindering those underlying the growth paradigm. This example focusses on *meanings*, but it should be clear that they are shaped recursively in conjunction with other elements of practices: materials and competences (in Shove’s model).

Finally, it should be noted that because of the partially unintentional nature of practices, the complexity of the interconnections and the conflicts about practice hierarchies, society cannot be totally controlled. Today’s routines sustaining practices can fade away, affecting co-dependent routines and potentially leading to turbulence, or even the breakdown of previously stable complexes. Attempts to transform social processes can thus trigger unintended outcomes – and especially resistance (see Section 3.3.2); power is never absolute, including under the capitalist mode of power.

4.2.8 Non-linear change

How can human societies generate unexpected and far-reaching changes, despite the routines and co-dependences ensuring the continuity of practices, and lead small to large phenomena to dissolve? The world has stabilising processes, but like complexity theory and evolutionary theory, SPT (e.g. Schatzki, 2016) emphasises that it can change in an

¹⁰⁸ See also the broader definition in Table 1, p. 7.

unexpected, non-linear fashion – either under the deliberate action of humans or due to broader biophysical processes. An action can indeed provoke chains of reaction and a succession of changes, which can lead to the destabilisation or decimation of previously “stable” complexes, from small material processes to the wide-scale social imaginary – including the imaginary of growth and the ideology of capitalisation. Non-linear change can be slow or fast. For Schatzki, “[s]tock market runs are a classic example [of fast non-linear change], as are people fleeing invading marauders, sudden shifts of the electorate before an election, and the going viral of videos” (2016, p. 20). At the same time, it can leave room for new practices, bundles and complexes, differing from the prevailing logics and paving the way for a new society.

4.2.9 Summary

To recapitulate, SPT emphasises that society is ever-changing through the interrelated *practices* performed by individuals. Practices shape and are shaped not only by material elements, but also by meanings and competences (following Shove’s model). The practices are interlocked to varying degrees, from bundles (co-existence) to complexes (co-dependence). Practices reproduce themselves through the strength of habits, through the circulation of their underlying elements, through the evolution of their co-dependent practices and through path dependency. It is a useful social theory to understand how capitalism shapes life, being organised around the key practice of capitalisation. Finally, it illuminates the possibilities of change from within capitalism. SPT offers a social basis for the concept of power as *confidence in obedience* described in Chapter 3. See Table 5 for the definition of key concepts.

Table 5. Definition of key concepts based on Social Practice Theory

Concept	Definition
Social practice	A routinised and interconnected set of human activities shaped by materials, shared meanings, and competences. Social practices form the basis for human actions in society. Practices-as-entities are enduring processes; practices-as-performances are one time, unique performances sustaining a practice-as-entity.
Elements	Materials, meanings, and competences, which together form the foundation for enacting practices.

Material	Human and non-human bodies, physical items, technologies, raw materials and other tangible elements from the socio-ecological world.
Meaning	Meanings or ideational elements shared by practices, which contribute to the understanding, interpretation, and significance of actions and objects within social practices.
Competence	The know-how, skills, practical understandings and abilities required for individuals to engage in social practices effectively.
Circulation of elements	The changing availability of elements required for individuals to engage in social practices effectively.
Bundle	A group of interconnected but loosely integrated practices that are commonly performed together, often sharing elements and reinforcing each other.
Complex	A network of tightly interrelated practices, bundles, and elements that shape and influence one another within a specific context.
Circuit of reproduction	The cycle of performance, adaptation, and transformation of social practices, which sustains and perpetuates practices-as-entities through repeated practice performances.
Gap within social practices	An absence of or deficiency in crucial elements or connections. This may lead to inconsistencies, inefficiencies, or decline of a practice or complex.
Capitalist practices	The interconnected set of social practices that shape and underpin the capitalist system. Central to capitalist practices is capitalisation, a deeply embedded routine that involves assessing the value of something in terms of investment and expecting future earnings.
Practice hierarchies	A dynamic, relational concept referring to the ways in which social practices align, support, or hinder each other within a given system, such as capitalism. Practice hierarchies shape power relations and the distribution of power within society, as they determine the possibilities for specific practices to emerge or flourish. These hierarchies are not fixed but constantly evolving, funneling and amplifying socio-ecological change in specific directions while limiting or inhibiting other options.

Now that we have the needed theoretical elements to understand how social life moves and stabilises, the next section will draw on it to clarify how degrowth strategies tentatively reshape society.

4.3 Modes of degrowth transformation

Through its struggle for a socially just and democratic limitation of material and energy throughput, the degrowth community promotes manifold socio-ecological changes to move beyond capitalism and growth. The broad paths advocated by the degrowth movement can be categorised using Erik Olin Wright's typology of modes of transformation (Wright, 2010): *interstitial*, *symbiotic* and *ruptural* transformations. Interstitial transformations consist of people experimenting with changes through autonomous spaces and initiatives living on the margins of capitalism. For their part, in symbiotic transformations, which are usually carried out through traditional political systems, different social forces make compromises which lead to reforms. Finally, ruptural transformations seek the disruption of capitalist relations through confrontation. These three modes of transformation are often considered as interplaying, although degrowth scholars have less emphasised ruptural transformations compared to interstitial and symbiotic logics (Chertkovskaya, 2022). Wright's typology has recently increased in popularity in the degrowth literature through its discussion of strategy (Bardi et al., 2021; Barlow et al., 2022; Chertkovskaya, 2020; D'Alisa & Kallis, 2020; Schmid, 2021). It should be noted that these dynamics are not mutually exclusive; they can be totally intertwined. For example, an activist movement can, at the same time, act toward ruptures in capitalist practices, embed interstitial dynamics with the application in their own activist practices of some principles they want to see more broadly in society, and participate in symbiotic dynamics if, for instance, they engage with policymakers.

However, it is difficult to fully understand how these logics transform the world without an underlying theory that describes how it is dynamically changing and stabilising. While acknowledging the role of culture, ideology, institutions and coercion, Wright sees *material interests* as the ultimate determinants of stability and change within capitalism (Wright, 2010) – due to a Marxian influence and which might be reductive compared to SPT's fundamental multidimensionality. Furthermore, he includes these elements in a theory of *social reproduction* and not of *change*. It remains unclear how the

linkage between these elements brings about transformations. In other words, Wright has selected the ingredients of what binds society together, but he lacks a theorisation of how they are reconfigured through interstitial, symbiotic and ruptural transformations.

SPT offers ontologies of social processes allowing modes of transformation and modes *strategic sabotage* by dominant capitalists to be analysed in relation with each other. The next three sections explain the different strategies while converting them into SPT's language.

4.3.1 Interstitial transformations: Nowtopias and the mycelium of degrowth practices

The concept of the interstitial transformation refers to the progressive creation of a *new* society from the *interstices* of the current one:

“The adjective ‘interstitial’ is used in social theory to describe various kinds of processes that occur in the spaces and cracks within some dominant social structure of power. One can speak of the interstices of an organization, the interstices of a society, or even the interstices of global capitalism.” (Wright, 2010, p. 322)

From a practice theoretical perspective, interstitial transformations then seek to assemble practices in the gaps of capitalist complexes and hierarchies of practices. These degrowth transformations imply the circulation of new combinations of material objects, meanings and competences, corresponding to alternative ways of doing, thinking and experiencing the world – contrasting with the logics imposed by capital accumulation and the growth paradigm.

Interstitial transformations lead to the emergence and development of a wider diversity of practices, from very small-scale ones, at the *individual* level (e.g. from changes in eating habits to tweeting ideas and knowledge on degrowth), to more *collective* and *formal* processes (such as setting up a cooperative or creating a degrowth-oriented educational programme). They build on existent elements and practices to recombine them and provide bases for further processes that could lead to unexpected cultural, material and competency changes.

Such practices are often associated with prefigurative politics, i.e. “how activists embody and enact, within their activism, the socialities and practices they foster for broader society” (Fians, 2022, p. 1). To emphasise the prefigurative nature of these practices, degrowth scholarship sometimes calls them “nowtopias” (e.g. Kallis et al.,

2012; Petridis, 2016; Schmelzer et al., 2022). The degrowth movement, as a “movement of movements” (Herbert et al., 2018), promotes a mosaic of interstitial practices that contribute to a material and energetic downsizing of the world, while de-economising social relations, including by rejecting capital accumulation. These movements share several key themes, including a focus on fulfilling the basic needs and well-being of all individuals, acknowledging human complexity and interdependence, and adopting a holistic view of society, power, and politics. In line with degrowth principles,¹⁰⁹ they advocate for global justice, challenge the “green economy” discourse, and promote democratisation and participation for all. These groups aim for systemic change and paradigm shifts, and actively work to initiate change in the present through alternative projects with tangible goals (Treu et al., 2020). The degrowth community often sees these initiatives as concrete evidence that degrowth principles have already emerged within societies, at small scale. They contribute to building, step by step, a counter-hegemonic culture with new ideas rejecting the ideology of growth and the primacy of the economy (Schmelzer et al., 2022). Cooperatives, alternative food networks, ecovillages, energy communities, fab labs and zero-waste groups are examples of them.

It is obvious that the emergence of these alternatives is not without tension between the stated values of the people and groups involved and the concrete implementation of the principles. To illustrate, Box 1 describes a study in which we investigated how food cooperatives may challenge capitalist relations through different dimensions and to varying degrees.

Box 1. Food cooperatives as diverse re-embedding forces: A multiple case study in Belgium (Vastenaekels & Pelenc, 2020)

Food cooperatives have brought together citizens, producers, entrepreneurs, distributors and other actors to build alternative, sustainable, local food systems along the entire food supply chain. The capacity of these diverse cooperatives to move the economy towards sustainability remains unclear. To investigate this, in Vastenaekels and Pelenc (2020) we have conducted a qualitative study involving three food cooperatives in the retail sector in Belgium. By examining how they have implemented two cooperative principles,

¹⁰⁹ See Table 1, p. 7.

“member economic participation” and “concern for community”, we have explored the extent to which they are helping to “re-embed” the economy in society – adapting Polanyi’s concept of “embeddedness” to the micro level. From an empirical point of view, we offer a typology of food cooperatives and their “re-embedding potential”. The typology has two dimensions: (i) cooperative’s relationship to profit, from “investment-fuelled action” to “community-fuelled action” and (ii) the relationships created between consumers and producers, from “purely commercial relationships” to “cooperative partnerships”. These are not definite types but axes. Community-fuelled cooperatives, whose financing mainly comes from a multitude of citizens who do not seek profits, re-embed the economy more than investment-fuelled ones. The latter have a pressure to offer a certain return on investment to owners. In parallel, cooperative partnerships, which embrace long-term, project-based relations between the cooperative and its suppliers, have a higher re-embedding potential than purely commercial relationships, which put suppliers in competition. The three cooperatives studied position themselves differently along these axes. Through the paradoxes inherent in the practices of cooperatives, they exhibit different degrees of potential to transform capitalism brick by brick with their values and ethics.

SPT allows us to view collective (prefigurative, activist) practices as not emerging from nowhere, but rather from a substratum of material elements, meanings and skills, maintained by a multitude of practices that are not necessarily directed towards activism. To a certain extent, the set of degrowth-oriented interstitial practices can be seen as a kind of *mycelium*, the root-like network of mushrooms, which expands as a web below the ground (i.e. loosely co-dependent with capitalist practices):

“New shoots will sprout as the mycelium seeks new territory and weaves its web beyond the already established frontier. Seekers and explorers. Artists and discoverers. This process will go on until the spores of the frontier can no longer find nourishment. The expansion is a collective endeavour. [...] Mycelium is the continuous construction of an environment in which the individual spores of which it is comprised contribute, expose themselves, stagnate and pass away. Sometimes a spore engages intensively in mycelic activities, at other times it may be in a state of hibernation. Mycelium accepts the death of a spore. But connections can always remerge, be consumed and reanimated.” (Pullen et al., 2020, p. 162)

Like all social practices, those emerging from interstitial transformations (i.e. interstitial practices) have an intentional and an unintentional part; they grow from existing elements which they reconfigure, through the circuits of reproduction, to (potentially) give rise to new or transformed bundles and complexes of practices. In that context, conflicts between non-capitalist and capitalist practices are indirect.

Isolated, their agency is however more limited than when they gather in networks and other collective shapes – such as the Transition Network, food belts (which connect local food systems) or the global Repair Café network. These efforts rest mainly on the shoulders of citizens determined to contribute to socio-ecological change, but public authorities are also contributing to their development in various contexts. For instance, local governments can support local energy initiatives, while they mutually learn from and affect each other (e.g. Hoppe et al., 2015). Note that Wright sees interstitial transformations as mostly *bypassing* governments. However, from this perspective, this assumption should be relaxed. The creation of new practices can also take place in the gaps *within* the practices of government organs. See for example the *institutional activists* acting from the inside, where they have access to resources and power – forcing re-examination of the insider/outsider dichotomy (Pettinicchio, 2012).

Interstitial practices can compete with capitalist ones to recruit practitioners (for example, fixing a coffee machine in a repair café *versus* buying a new one from a conventional retail chain); but as long as they develop in the gaps of capitalism, they do not symbolise an existential threat for the hierarchies of practices and complexes defining the capitalist order. In that context, interstitial dynamics may not cause capitalists' a feeling of threat for their assets' value – and thus may not induce direct opposition. Therefore, the mycelium of practices can continue to develop progressively underground, accumulating resources, fostering new circuits of reproduction gradually. It could then fade to some point or in contrast, pass a tipping point. Like the underground mycelium giving rise to mushrooms in plain sight when conditions are met, degrowth practices may gain momentum and contribute to replacing capitalist ones, for instance, if competing capitalist practices have been disrupted through ruptural transformations (see Section 4.3.3) or if they scale up through an integration within structures transformed symbiotically (see Section 4.3.2). In this case they may threaten expected future earnings of some businesses and be part of more direct conflicts for the hierarchies of practices.

Do interstitial transformations form a credible route to radical transformations towards degrowth? Wright summarises a paradox:

“Interstitial strategies may create enlarged spaces for non-commodified, non-capitalist economic relations, but it seems unlikely that this could sufficiently insulate most people from dependency on the capitalist economy and sufficiently weaken the power of the capitalist class and the dependency of economic activity on capital accumulation to render the transition trough in the revolutionary scenario short and shallow.” (p. 236)

Overall, interstitial transformations contribute to degrowth, but complementary strategies are likely to be necessary. The two next sections address two of them: symbiotic and ruptural strategies of transformations.

4.3.2 Symbiotic transformations: Paradigm-shifting institutional reforms

Changing society’s key institutions is what Wright refers to as *symbiotic transformations*. The concept of the symbiotic transformation has been regarded as a vital part of the transformation. In this vein, besides expanding the scope of nowtopias, degrowth proponents also focus on developing proposals for transforming institutions and policies (Cosme et al., 2017; Fitzpatrick et al., 2022; Parrique, 2019).

Instead of building new practices loosely integrated with dominant ones, symbiotic transformations draw on existing practices and institutions to make them evolve gradually. Symbiotic transformations emphasise the possibilities of transformation driven by the collaboration and compromises between the ruling class and the rest of society:

“The basic idea of symbiotic transformation is that advances in bottom-up social empowerment within a capitalist society will be most stable and defensible when such social empowerment also helps solve certain real problems faced by capitalists and other elites” (p. 240)

From a practice theoretical understanding, this means a transformation that seeks to align some aspects of transformative practices with dominant practices to benefit from the latter's influence in the plenum of practices more widely. A typical example is to use the influence of various levels of government to implement changes in policies – i.e. instrumentalising the state's hold on society to institute new practices. For Wright, symbiotic transformations can indeed typically occur when it comes to negotiating and implementing policies through government interventions, from local to global levels:

“These efforts at locally-rooted symbiotic transformations have involved such things as watershed councils, community development projects, community health projects, labor market training partnerships, and many other things. In each of these instances there are practical problems which in one way or another challenge the interests of elites as well as ordinary citizens and in which, under some conditions, a collaborative strategy of seeking solutions to the problem becomes attractive to contending social forces.” (Wright, 2010, pp. 252–253)

In that context, the degrowth community advocates for a range of policies that are designed to promote consumption and production’s reduction in democratic and equitable ways. A systematic review by Fitzpatrick et al. (2022) identified a comprehensive degrowth policy agenda of 530 proposals. These proposals cover 13 policy themes, including food, culture and education, energy and the environment, governance and geopolitics, indicators, inequality, finance, production and consumption, science and technology, tourism, trade, urban planning, and work. While some countries, regions, and cities have already implemented elements of degrowth policies, key proposals include using alternative indicators to GDP; reducing less-necessary production; diminishing reliance on fossil fuels and transitioning to renewable energy sources; capping income and wealth; introducing a basic income; introducing a green jobs guarantee; reducing working time; promoting cooperatives; helping the development of ecovillages; and reclaiming the commons in different areas (Cosme et al., 2017; Fitzpatrick et al., 2022; Hickel et al., 2022). While degrowth is often associated to bottom-up alternatives, key authors also emphasise the need for “universal access to high-quality health care, education, housing, transportation, Internet, renewable energy and nutritious food” (Hickel et al., 2022, p. 401). They argue that these services can contribute both to justice and lower resource intensity.

Because these proposals tend to be loosely articulated (Fitzpatrick et al., 2022; Parrique, 2019), some authors have envisioned a Green New Deal (GND) without growth as a transitional strategy for degrowth (Mastini et al., 2021; Parrique, 2019; Pollin, 2018). This approach proposes ambitious decarbonisation policies to meet emission reduction objectives, mainly using the potential of public investment to steer towards a massive shift of existing practices. It would need to divert the green growth bias from dominant GND visions and implementations towards more radical views (Mastini et al., 2021), while making compromises with leading corporate-government coalitions may be inevitable. In that sense, a GND without growth may facilitate a symbiotic transformation

of society in line with degrowth principles. It seeks to work within the context of capitalism and stretch its limits.

Degrowth scholarship tends to discuss symbiotic and interstitial strategies as complementary (Chertkovskaya, 2022; D’Alisa & Kallis, 2020; Schmelzer et al., 2022). Alternative practices need gaps, which can be opened with symbiotic and ruptural transformations, while establishing new institutions requires a broad support basis, which can be developed through the spread of new practices.

Changing society via symbiotic transformations is not necessarily easier than with interstitial dynamics, though. One of the main reasons is that governments and large corporations, which dominate capitalist societies together (see Chapter 3) have a vested interest in maintaining their power intact. The challenge becomes to be able to instrumentalise more than being instrumentalised by the rulers for their own interests. This obstacle invites us to consider a third mode: ruptural transformations.

4.3.3 Ruptural transformations: Putting a stick in the wheels of capitalist dynamics

Ruptural transformations, advances Wright (2010), are associated with revolutionary changes in the fundamental institutions of the capitalist society. New institutions are created via a disruption of existing institutions and social systems. Building on a revolutionary Marxist tradition, Wright has described mainly potential systemwide ruptures, through which institutions are erased and replaced with new ones in a relatively short time frame – such as through the seizing of the State by the working class and the large-scale collectivisation of the means of production. He is sceptical of this prospect. He finds it unlikely since a “strong, radical, and coherent opposition capable of confronting and dislodging state power head-on” (Schmid, 2019, p. 127) would be needed. This option would be equally undesirable, as its potentially violent and confrontative logics could (temporarily) impede equality and social justice. In such a scenario, a counterrevolutionary force would likely emerge due to threatened material interests. Similarly, degrowth scholarship rarely discusses strategies for such large-scale disruption.

Wright (2010) recognises, however, that “more limited forms of rupture in particular institutional settings may be possible” (p. 308). Indeed, SPT contends that small and large phenomena follow similar dynamics – they only differ by their (spatial-

temporal) extents, as well as by the complexity of the relations between practices (Schatzki, 2016). From this perspective, there is no reason to consider only complete breaks in the large complexes which sustain the capitalist mode of power. As Chertkovskaya (2022) argues, ruptures can also be “small-scale and temporary” (p. 60). For example, when climate activists block a coal mine, it is a temporary rupture in the use of material objects by the mine's operators, but it “empowers and encourages other forms of action” (Chertkovskaya, 2022, p. 60). Or in other words, temporary rupture may support the diffusion of elements and practices aimed at future transformations.

In this sense, ruptural transformations seek partial or total discontinuities in hierarchies of practices, *now* and/or *in the future*. Breaking hierarchies means undermining the circulation of elements underlying these practices, seeking their erosion or disappearance. It also includes disrupting the links that keep capitalist practices going (Schmid, 2021). SPT suggests that not only material but also ideational (meanings) as well as practical knowledge aspects (competences) are crucial.

From a practice theoretical perspective, ruptures are crucial for interstitial and symbiotic transformations. Indeed, Shove et al. (2012, p. 58) argue that the arrival of new elements in social practices may depend on the demise of others. The persistence of social practices is not a linear evolution but rather an emergent process that involves the “packing and unpacking” and mutual shaping of materials, competences, and meanings. This process may require some elements or practices to make space for others. See also Box 2.

In that context, the material disruption of growth-oriented practices, such as the resistance of destructive, industrial projects with *Zones to Defend* (ZADs) and other resistance movements (Pelenc et al., 2019), is essential. It is complementary to rupture in the reproduction of harmful meanings, such as with the systematic debunking of the fallacies of the green growth discourse (e.g. Parrique et al., 2019). Similarly, reforms of educational programmes, from pre-school to university degrees, are potential ways to disrupt the circulation of *competences* harmful to the socio-ecological world, to allow room for more sustainable educational practices.

Box 2. Alternative and resistance movements: The two faces of sustainability transformations? (Pelenc et al., 2019)

In Pelenc et al. (2019), we propose the hypothesis that (interstitial) alternatives and (ruptural) resistance movements are two types of movements that should be considered in continuity rather than in opposition. In that sense, alternative movements are also sites of resistance practices to dominant systems, whereas resistance movements often embody alternative practices; they feed and shape each other, while relying on common meanings. Furthermore, both types of movements grow through horizontal networks; they are both spaces of emergence of new collective and individual political identities; and finally, they are both often locally grounded. We suggest four facets that should be investigated further about the contribution of both alternative and resistance movements to transformations toward sustainability: (1) to reflect on the radical or reformist aspect of the movement under study; (2) to pay attention to which kind of conception of democracy the movement under study relies on; (3) to investigate how the movement positions itself regarding power relations and power structures and; (4) to examine the individual and collective politicisation processes that occur. From this perspective, we stress the need for a truly “socio-political” approach to sustainability transformation processes to unravel the power relations which shape them.

Ruptural dynamics also comprise the struggle for various degrowth policies the objective of which is not to diminish, and regulate, but to *dismantle* unsustainable practices.¹¹⁰ In that context, ruptural transformations also include Latouche’s (2014b) idea of *decolonising imaginaries*, which seeks to disrupt the circulation of economic meanings, in the hope of overturning the practices that underpin the ideology and materialisation of growth. For instance, Koch (2020a) proposes the concept of *countertraining*, which he claimed can awaken and activate the habits that are furthest

¹¹⁰ In that sense, ruptural processes, from small to large ones, are similar to what Feola et al. (2021) refer to as *unmaking*. Through this idea, they contend that socio-ecological transitions “might not come about through the mere addition of supposed *solutions*, values or social imperatives (e.g. Leff, 2010), but rather by subtracting problematic existing institutions, forms of knowledge, practices, imaginaries, power structures, and human-non-human relations in the first place” (p. 2). This umbrella concept covers a range of concepts from several fields, which express the idea of rupture in their respective frameworks: *exnovation* (Davidson, 2019; Fossati et al., 2022), *destabilisation* (Turnheim et al., 2019), *unlearning* (Fiol & O’Connor, 2017), *sacrifice* (Maniates & Meyer, 2010), *crack capitalism* (Holloway, 2010), *resistance* (J. Scott, 1986), *refusal* (McGranahan, 2016), and *delinking* (Mignolo, 2007) – see also *ecology of dismantling* (Bonnet et al., 2021).

from the colonisation of people's minds and bodies by the growth imperative. The idea of unmaking carries with it the ability to generate new possibilities. It allows for the creation of a blank space, both symbolically and physically, which can be filled with new ideas and ways of being. These new possibilities open spaces for the unimaginable or inaccessible (Feola, 2019b).

In sum, thinking about ruptures with SPT allows us to move beyond the idea that ruptures are only large-scale, revolutionary. Ruptural transformations may concern aspects of practices, disrupting specific underlying elements. They can also focus on the links between practices, or even between bundles and complexes. They can be temporary or permanent, and immediate or forward-looking. An SPT perspective suggests that ruptures are *essential* to create openings and pave the way for interstitial and symbiotic transformations. They should be more thoroughly considered by those concerned with socio-ecological transformations.

4.3.4 Element of dynamics V: Interconnected modes of transformation

This typology of degrowth transformations leads to a new element of dynamics for a theory of change for degrowth. An overview of this dynamic is shown in Figure 13. To recap, interstitial transformations involve individuals and groups experimenting with changes in autonomous areas and initiatives outside the capitalist system. These shifts, emerging from a substrat of meanings, materials, and competences may challenge the growth paradigm and encourage alternative futures by reconfiguring and circulating new meanings, materials, and competences (R1). This leads to the spread and reproduction of practices, bundles and complexes, supporting the circulation of degrowth elements (R2). Based on the new material, meaning and competence elements that circulate within society and related complexes, symbiotic transformations emerge. Yet, symbiotic transformations build on interstitial transformations to modify society's practices; they nourish each other, via the gaps in capitalist complexes of practices (R3). Lastly, ruptures can directly challenge capitalist structures. These changes can challenge minor practices to capitalist complexes and thereby create gaps for new practices (R4). Interstitial, symbiotic and ruptural degrowth transformations interplay and support each other.

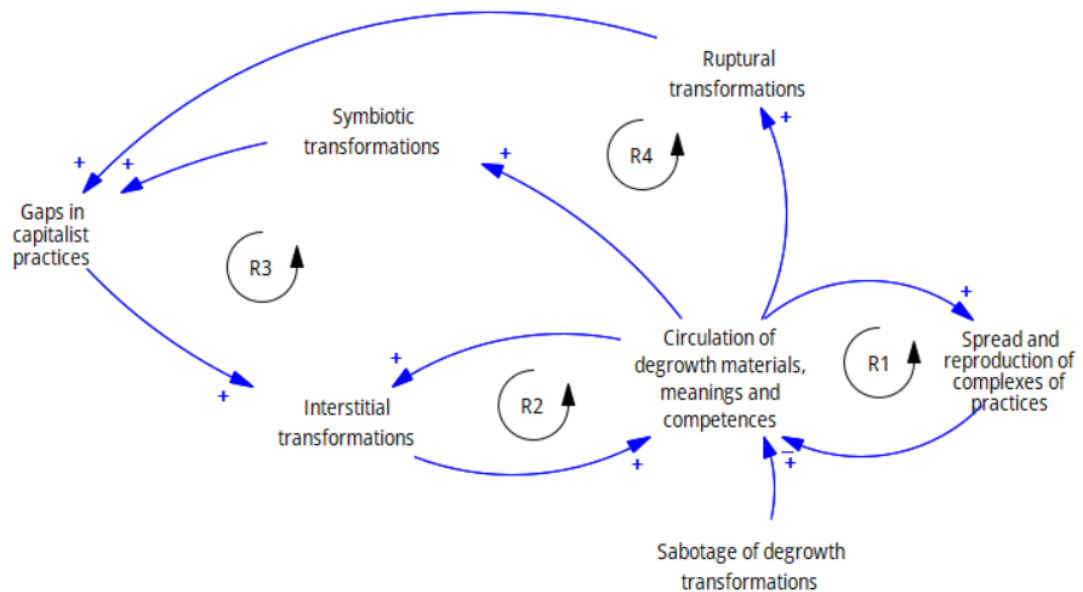


Figure 13. Element of dynamics V: Interconnected modes of transformation

4.4 Modes of sabotage: Inhibiting degrowth transformations

Under the capitalist mode of power, powerful coalitions rely on various forms of strategic sabotage to maintain and increase their differential power – i.e. *the constant restriction, limitation and inhibition of the autonomy of those with less or no power* (see Section 3.3.3). Instead, people’s practices are tentatively channelled to contribute to consolidating dominant capital groups’ power. This includes wide-ranging means – from persuasion to shaping social norms, constraining laws, institutional lock-ins, threats and force – whereby corporate-government coalitions limit access to resources and opportunities to maintain their differential power over society.

The concept of strategic sabotage helps think beyond a divide between supposedly mechanistic markets’ obstacles to socio-ecological alternatives and purely political obstacles. In the former case, alternatives are often considered as not competitive enough to survive within markets driven by mechanistic logics (e.g. Sharzer, 2012). In the latter case, the role played by large corporations is often overlooked. However, CasP scholarship has not so far developed specific knowledge about processes of strategic sabotage which counteract transformative processes of socio-ecological change. This is

where SPT is especially useful. Once I have described modes of transformation in a practice theoretical language, it is possible to use SPT to reflect on the processes that may hinder them.

In the remainder of this section, I draw on the key elements of SPT introduced in Section 4.2 to propose four hypothetical modes of sabotage that hinder the flow of the three modes of transformation of capitalism put forward by degrowth (see Section 4.3): hierarchical complexification (4.4.1), the increasing co-dependence of socio-ecological life on the unifying logic of capitalisation; the saturation of interstices, limiting the possibilities for developing alternative practices (4.4.2); capture, the co-optation of aspects of alternative practices (4.4.3); and rupture, the undermining of alternative and contesting practices, through direct confrontation (4.4.4). Eventually, these dynamics are connected as a system in a causal loop diagram (CLD) in Section 4.4.5 (Element of dynamics VI).

4.4.1 Hierarchical complexification: Subordinating parts of the world to capitalisation

Hierarchical complexification refers to the process by which parts of society – and ultimately, society as a whole – become more hierarchical over time. Using SPT, I propose to define *hierarchical complexification* within capitalism as the expansion of complexes of co-dependent practices, to form ever-growing *practice hierarchies* (see Section 4.2.7) organised around capitalisation and differential accumulation. Hierarchical *complexification* means that the relations of subordination are not pre-set but emerge while practices become co-dependent. Hierarchical complexification emphasises that the takeover of society and nature by capitalist coalitions is broader than the appropriation of the means of production and commodification. They actively attempt to mould the set of interconnected, dynamic processes, relying on routines, material, cultural, and competence elements, that shape the distribution of power in society. Hierarchical complexification highlights that control is not only about material conditions but also meanings and competences.

From within the gaps of previous hierarchical complexes, like feudalism (Sweezy, 2006), capitalism became an increasingly complex assemblage of power processes, which may become more and more difficult to disrupt (i.e. with ruptural transformations) or radically reform (i.e. with symbiotic transformation). The capitalist society evolved into

a *full-spectrum hierarchy*, an ever-changing enfoldment of dependent formations (Bichler et al., 2017), which I divide into small, medium and large hierarchies (to echo the continuum between small and large phenomena described in Section 4.2.5). *Small hierarchies* comprise power relations in everyday life, groups, communities, the inner practice hierarchies of formal organisations such as firms and governments. *Medium hierarchies* have thicker layers of subordination; they include entire formal organisations like governments and other political institutions, corporations and NGOs. A typical hierarchical complexification is the merger and acquisition. The mutual enfoldment of governments and corporations (see Section 3.3.5) is also a form of hierarchical complexification. Finally, *large hierarchies* are the most spread out practice hierarchies, encompassing broad, foundational concepts and institutions that shape capitalist society as a whole. These include liberty, private property, as well as broad social dimensions such as culture, ethnicity, religion, nationalism, and “economic myths” that underpin the growth paradigm (see Laurent, 2022; Méda, 2013). The larger the hierarchy, the more diluted, imperceptible, and difficult to change it is, but also the more powerful it is.

The concept of hierarchical complexification as described here involve capitalisation practices that become more and more central for small, medium and large hierarchies. Muniesa et al. (2017) offer concrete examples:

“Financial institutions, banks and funds of various kinds, multinational companies, regulatory agencies and governmental bodies, treasury departments, international policy organizations, consulting firms, educational institutions and research universities, law firms and courts of justice, professional associations, or, in short, the multifaceted and intricate assemblages that make the so-called “rise of finance” constitute the prime hub for the elaboration of capitalization.” (p. 136)

In other words, hierarchical complexification is when parts of life become, directly or indirectly, “assets”, through the continuous assembly of social practices; when they are subjected in a tighter way to capitalisation, or even, as Muniesa et al. (2017) may put it, when they become “an object of investment” (p. 130).

Hierarchical complexification, in principle, indeed, improves the capacity of rulers to resist rupture and profound changes, but paradoxically, it also makes the system as a whole vulnerable to collapse. The tight relations of co-dependence with capitalist practices make them more difficult to disrupt or symbiotically changed as co-dependencies may need to be overcome or transformed in the process: hierarchies “give a

system stability and resilience” (Meadows, 2008, p. 83). Furthermore, if a society is already highly hierarchical, it may be more likely that new social practices and institutions will also be hierarchical in nature, as they will be shaped by and reinforce existing power dynamics. Moreover, individuals might be dissuaded from questioning prevailing hierarchies due to cultural norms, beliefs, and values that endorse such structures.

Conversely, hierarchical complexification can be vulnerable to rupture owing to the concentration of power, rigidity, inflexibility, cascading effects, and non-linear change (see Section 4.2.8). In highly complex systems, poor decision-making and the interplay of various factors can lead to crises and leave the system exposed to disruptions (Bardi, 2020). Disruptions occurring at higher levels of the hierarchy may trigger cascading effects that impact lower levels, possibly leading to the collapse of the entire system.¹¹¹

While hierarchical complexification both fortifies differential accumulation and make the entire more vulnerable to drastic change, it facilitates other modes of sabotage: the saturation of interstices, capture and rupture, addressed in the next sections.

4.4.2 Saturation of interstices: Monopolising the circuits of reproduction of practices

The saturation of interstices is a limitation imposed on the emergence and performance of alternative practices. I hypothesise a possible mode of stabotage that inhibits interstitial transformations and marginalises alternative practices, through the monopolisation of practices’ circuits of reproduction (see Section 4.2.4). Recall that practices stabilise and change through three circuits of reproduction: the integration of elements underlying practices (materials, meanings, competences); the relations between practices; and the evolution of practices into the future following temporal dynamics. The assumption underlying this process is that individuals only have the opportunity to use a limited number of material objects; we neither have the mental capacity to appropriate all the meanings that circulate in the world nor do we have the chance to acquire all of humanity’s knowledge and skills. There are limits related to material, physiological,

¹¹¹ This tension is also reflected in the concept of “systemic fear” (see Section 3.5.1).

psychological or time factors (because the day is only 24 hours long),¹¹² for instance. In this sense, individuals and groups can be *saturated* by (undesirable) practices, limiting the chance to find and exploit gaps within capitalist practices and complexes, to experience and engage in new practices.¹¹³

Hierarchical complexification plays a role in bolstering the saturation of interstices by contributing to the monopolisation of practices' circuits of reproduction, which in turn restricts the emergence and performance of alternative practices. The more power coalitions control the circulation of material objects, meanings and competences, the more they are able to channel (to some extent) the integration of elements in particular directions. By doing so, they may also control the second circuit of reproduction: because elements also serve as links between practices, their monopolisation can shape more largely the web of practices in which individuals are involved. Furthermore, they influence the trajectories of societies (path dependencies) because of the latest circuit of reproduction – evolution of practices into future ones.

The saturation of interstices encompasses the monopolisation of reproduction circuits corresponding to the three elements of Shove's model: the monopolisation of material objects, of meanings and of competences. In the first case, it is indeed widely acknowledged that the material world is highly unequally controlled. Capitalist societies exhibit deep wealth and income inequalities (Piketty, 2013), while at the same time prices are ubiquitous and determine people's ability to meet their material needs (Nitzan & Bichler, 2009, pp. 151–153). This implies an unequal access *within* and *between* societies – see, e.g. the tremendously unequal exchange (and thus control) of biophysical resources between poorer and richer countries (Dorninger et al., 2021).

Regarding meanings, the full spectrum of communication means can be used to colonise the imaginary with economic representations and hinder degrowth transformations. Advertising is a typical way of monopolising their circulation: capturing attention and influencing consumers' meanings is the core business of this sector. In this regard, only a few corporations dominate global advertisement expenditures. In 2021, the

¹¹² The feeling of time scarcity is often seen by grassroots actors as an obstacle to the development of alternative practices (Fernandez-Wulff, 2018).

¹¹³ In that sense, the dichotomy between “work time” and “free time” could be nuanced. When is our time really “free”?

top 30 global advertising corporations spent 44% of the total advertising expenditure within a set of 800 multinational advertisers (COMvergence, 2022).

Finally, controlling skills and practical knowledge (competence) is also a way to influence and keep individuals locked into specific practices. It may be difficult to influence informal education directly, but it is possible to do so indirectly by controlling the circulation of material objects and meanings. Indeed, we train ourselves and develop competences by using the objects available in the material world around us, according to the meanings we give them (Holtz, 2014). On the other hand, the business world has a direct and indirect influence on formal education, at all levels, across the world (Ball & Youdell, 2008; Kivisto, 2018; Verger et al., 2016), which may potentially lead educational systems to saturate people with competences useful for businesses rather than for undertaking socio-ecological transformations.

The saturation of interstices is not just a barrier to the development of currently existing, albeit fringe, alternative practices. This mode of sabotage might also stop the development or even the mere imagination of new practices.

4.4.3 Capture: Co-opting elements of alternative practices

Whereas the term “degrowth” is expected to provide some protection against “linguistic distortion or co-option by capitalist forces” (Liegey & Nelson, 2020, p. 33), due to a supposed incompatibility with business jargon, the multitude of underlying processes of transformation are still at risk of being captured. Alternative and dissenting practices are indeed often absorbed and integrated into capitalist ones, as many authors have remarked (Gendron et al., 2009; Holdo, 2019; Jaffee & Howard, 2010). Capitalists attempt to do so “to address a challenge they face, or to respond to the expectations of other stakeholders” (De Schutter & Dedeurwaerdere, 2021, p. 47), and ultimately to maintain or improve its position in the race for differential accumulation.

Capitalist groups can capture alternative practices by integrating elements of alternative practices into their own practices. Large corporations may appropriate the language and symbols of grassroots movements and environmental practices, using them to create a false sense of shared values and to neutralise opposition to their activities. For example, they may use terms like “sustainability” and “eco-friendly” in their marketing campaigns to appeal to environmentally minded consumers (Carroll et al., 2017). In terms of materials, corporations can capture sustainable resources and technologies, such as

incorporating green energy into their operations, giving them an appearance of environmental responsibility. As for competences, they can acquire skilled individuals or expertise from alternative practices to further their own interests, like hiring environmental activists as consultants or acquiring green start-ups (Kwon et al., 2018). Degrowth practices may become dependent on the circulation of material, meanings and competences controlled by large corporations and/or allied to government organs, which can compromise their independence and ability to maintain their original goals and principles.

In this sense, capture is therefore *partial*. For example, by marketing products or ideas associated with these practices – such as resilience, sobriety, circularity or agroecology – using them to create new trends, or to present their products as more ethical or sustainable choices. In some cases, this can make alternative practices more accessible and widely accepted, but it can also distort them or make them less effective in challenging the capitalist system. Similarly, energy corporations can support community energy projects by partnering with them. Doing so can help overcome local communities' opposition to the development of wind farms and rebrand themselves as “green” (Seyfang & Haxeltine, 2012). Therefore, whether some practice's capture is *harmful* or *useful* depends on the viewpoint taken. From a degrowth perspective which argues for democratising society, the control of alternative practices by dominant capital is problematic.

Furthermore, capture is not a *once and for all*, it is a dialectical process. For example, the capture and scaling up of organic food by dominant capital has helped circulate positive meanings associated with this type of food, which can then be used by movements to develop new practices. For Ikerd (2017) the modern “local food movement has emerged from the erosion of public trust and confidence in organic foods” (p. 5). In that sense, Pel argues that capture can act as a trojan horse and “need not be considered as undesirable per se” (Pel, 2016, p. 673). It is thus difficult to predict what will ultimately come out of capture dynamics.

Hierarchical complexification can contribute to the capture of alternative and dissenting practices by reinforcing the dominance of capitalist practice hierarchies over the practices to be captured.

4.4.4 Rupture: Disrupting transformative change

Rupture is the counterpart of ruptural transformations (see Section 4.3.3), i.e. a confrontation involving significant alterations in social practices. Dominant capital groups may intentionally instigate or contribute to such dynamics of sabotage, leading to the undermining of resistance to their hegemony. Degrowth transformations may face disruptions from capitalist forces through a variety of means. These perturbations may target the material, meaning, and competence elements involved in degrowth transformations or strive to engender discontinuity amongst these dimensions or between disparate practices.

In this way, capitalists and their allied government organs can contribute to ruptures by controlling the access, use and existence (i.e. the circulation) of material elements. This might involve the limitation of access to renewable and common resources, to public space and other useful material elements. This also includes taking advantage of government's monopoly of legitimate violence to physically and legally remove protesters. For example, UK activists involved in the Extinction Rebellion movement, which advocates for urgent action on climate change, have been arrested and charged with various offences, such as obstruction of the highway and criminal damage (BBC News, 2022). In many other cases, climate activists challenging capitalist activities have been the target of violence and intimidation (ECNL & ICNL, 2021; Glick, 1989).

Capitalist forces might also seek to modify the meanings associated with degrowth practices, rendering them less alluring or even stigmatising them. This includes campaigns that depict degrowth proponents as anti-progress. Several authors underline the role of corporations in shaping culture and meanings (e.g. Davis, 2000; Korten, 2015; Perrow, 2005). This involves ordinary activities taking place at many levels: from advertising to the multiple forms of lobbying and corporate communication – which has proven to be a profitable investment (Hill et al., 2013; Hutchens et al., 2016).

Furthermore, capitalist groups may contribute to a limitation of the circulation of the competence elements on which degrowth transformations could rely. This kind of rupture can be direct, e.g. by influencing educational and training systems or disseminating misinformation, or subtle, such as with the process of planned obsolescence (Rivera & Lallmahomed, 2016): “increasing product complexity, technical constraints, and regulations have gradually narrowed the scope of the user's ability to tinker” (Hatta, 2020, p. 143). Planned obsolescence is possibly a way for firms to solidify

the continuity social practices which generate profits, by guaranteeing a flow of earnings due to the replacement of non-repairable objects. As a result, individuals may encounter a diminished capacity to engage in degrowth practices.

In addition to targeting the elements of degrowth practices, capitalist groups could also seek to create discontinuity amongst these dimensions or between various practices. This might involve fostering divisions within oppositional movements or disrupting the networks and connections that facilitate collaboration among practitioners. A way to do so is via astroturfing which involves setting up “fake grassroots organizations usually sponsored by large corporations to support any arguments or claims in their favor, or to challenge and deny those against them” (Cho et al., 2011, p. 571).

In summary, the concept of rupture embodies the confrontations that bring about significant changes in social practices, acting as a counterpart to ruptural transformations. Dominant capital groups, potentially supported by government organs, might intentionally create or contribute to these dynamics, thereby undermining resistance to their hegemony. Degrowth transformations face vulnerability to disruptions from capitalist forces. These disruptions can target material, meaning, and competence elements or aim to generate discontinuity among these aspects or between different practices. Consequently, grasping the intricate interplay between capitalists’ ability to exclude, restrict and disrupt, and degrowth transformations is crucial for identifying and addressing the challenges in the unfolding of degrowth transformations.

4.4.5 Element of dynamics VI: Modes of sabotage of degrowth transformations

This elementary dynamic is displayed in Figure 14. Hierarchical complexification in capitalism expands complexes of co-dependent practices, creating capitalisation and differential accumulation-centered practice hierarchies (R1). In combination with the saturation of interstices, this process can hinder the emergence and performance of alternative practices. To maintain or improve their position in the race for differential accumulation, capitalist groups can also capture alternative practices by integrating their elements, which can lead to diluting or abandoning the original goals and values of alternatives, which supports further hierarchical complexification (R2). Capitalists may use rupture to undermine resistance to their power, disrupting degrowth transformations and space for capitalist practices and hierarchical complexification (R3). Interstitial,

symbiotic, and ruptural transformations can be prevented by these processes. The saturation of interstices limits interstitial transformations, while the capture of dissenting practices and movements hinders symbiotic transformations that reform institutions and structures. Thus, hierarchical complexification, saturation of interstices, capture, and rupture hinder degrowth practices' transformative potential.

Note that each mode of sabotage can be opposed with varying degrees of resistance, which is represented with related arrows in the CLD. The ways in which modes of sabotage might be resisted will be discussed in Section 4.6. Before this, the next section offers an illustration of both modes of degrowth transformation and modes of sabotage in the context of the food system.

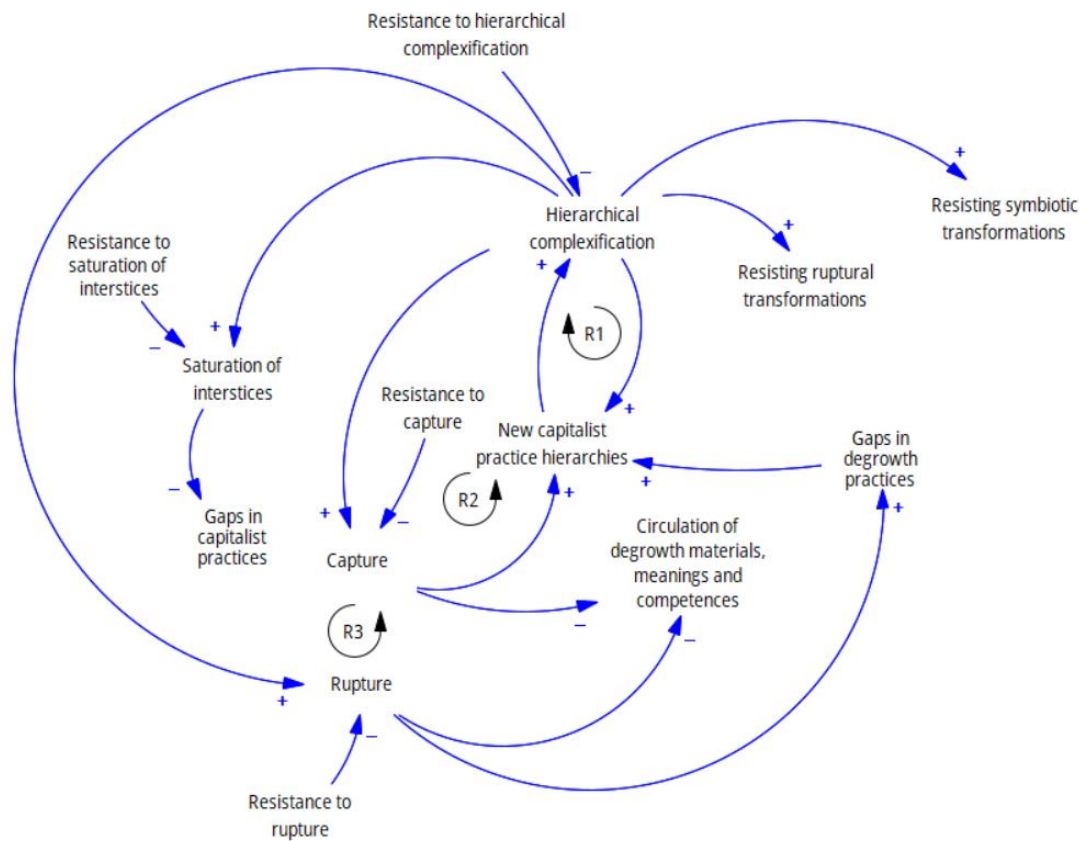


Figure 14. Element of dynamics VI: Modes of sabotage of degrowth transformations

4.5 Illustration: The degrowth transition to sustainable food consumption

This research journey started with the study of the transformative potential of food cooperatives (see Section 1.4.2), such as these initiatives supported by degrowth proponents – who have mostly focussed on interstitial transformations when it comes to transforming the food system (Nelson & Edwards, 2020; Plank, 2022). This section illustrates how these kinds of processes can be inhibited by the four modes of sabotage, with examples from Western capitalist societies. It is important to note that these processes are not exhaustive, but rather serve as examples of general processes. These illustrations cannot explain alone the whole dynamics of the transition to sustainable food consumption along the lines of degrowth but show the relevance of the typology proposed.

4.5.1 A focus on interstitial transformations

In response to the social and environmental consequences of the industrial food system (Blay-Palmer, 2008; Oosterveer & Sonnenfeld, 2012), bottom-up initiatives, which question the structural relationships between producers and consumers and agri-food practices, have flourished (Goodman et al., 2012; Hinrichs, 2014; O’Hara & Stagl, 2001). Degrowth advocates for interstitial transformations of food systems towards sustainability and equity (Brossmann & Islar, 2020; Kallis & March, 2015; Nelson & Edwards, 2020). They support food cooperatives and other grassroots initiatives gathering citizens, producers, entrepreneurs, distributors and other actors along the entire food supply chain (Berge et al., 2016; Spaargaren et al., 2012; Starr, 2010). Through their “promise of difference”, alternative food distribution systems describe themselves as alternatives to conventional, capitalist food systems (Le Velly, 2017). They are sometimes presented as autonomous spaces of resistance against the dominant principles underlying the capitalist, market economy (DiVito Wilson, 2013; Kloppenburg et al., 1996).

Food initiatives that follow the principles of degrowth, such as autonomy, commoning, and conviviality, tend to be small and locally based, often initiated and driven by grassroots efforts in urban or peri-urban areas. These initiatives prioritise self-sufficiency and community-building over growth (Nelson & Edwards, 2020). Food alternatives that prioritise principles in line with degrowth can be found throughout

Europe, though not all actors involved necessarily identify with the degrowth movement and some may not be familiar with the concept (Plank, 2022).

4.5.2 Hindering the emergence of degrowth food systems

How do hierarchical complexification, saturation of interstices, capture and rupture apply to the transition to sustainable consumption? In this section, I propose possible processes that could contribute to hindering, limiting or undermining degrowth transformations towards sustainable food consumption.

4.5.2.1 Hierarchical complexification

Using the concepts of small, medium, and large hierarchies, we can examine the capitalist food system from a more comprehensive perspective.

On the consumption side, small hierarchies may refer to the standardisation of our food practices, subordinated to the practices of dominant capitalist groups such as supermarket chains – in conjunction with the *saturation of interstices* (see Section 4.4.2). On the production side, the industrialisation of agriculture has come hand in hand with a hierarchical relation between agricultural workers and between agricultural workers and the living world. This can be seen as a form of hierarchical complexification, whereas peasants – whether in organic or conventional agriculture – develop less hierarchical relations with the other-than-human world. As anthropologist Dusan Kazic (2022) has shown they “‘animate’ the plants by weaving with them sensitive links that they cultivate” (p. 3).

Medium hierarchies involve entire formal organisations like governments, corporations, and NGOs. A common way that medium hierarchies can experience complexification is through mergers and acquisitions. For example, when Amazon acquired Whole Foods in 2017, it expanded its presence in the grocery market and further consolidated its position within the capitalist food system. The food sector has indeed experienced a high horizontal concentration (between competitors) and vertical integration (along the supply chain). In that context, food giants often have significant bargaining capacity and can shape the terms and conditions of their relationships with suppliers, which can create hierarchies within the supply chain (Clapp, 2021; Howard, 2016). Four of the biggest food commodity trading companies control over 90 percent of the world grain market (Murphy et al., 2012). Likewise, a limited number of companies dominate a significant part of the farm inputs sector as well as the food processing

industry. Retail is also a bottle neck, where most of the market share is distributed among a small number of players (Howard, 2016). Concentration of power within the food chain has been identified as one of the most significant barriers to change toward sustainable food systems (Howard, 2016; IPES-Food, 2016, 2017). This concentration was possible notably because giant food corporations have struggled against US antitrust laws (Howard, 2016). Their concentration allowed major producers to organise the dependency of suppliers. Their power is also a manifestation of the intertwinements between private and public entities, as US and EU producers have secured a large share of public subsidies for industrial farms (FAO et al., 2021; Howard, 2016).

Finally, large hierarchies encompass broader, foundational concepts and processes that shape the capitalist world as a whole. In the context of the capitalist food system, these hierarchies might include the notion of growth as progress, which drives the expansion of industrial agriculture and the pursuit of profit at the expense of social and environmental well-being, and cultural dimensions that influence consumption practices and reinforce the dominance of large corporations in the food industry. The idea of private property, which allows individuals and corporations to own and control land, resources, and production facilities is also crucial. Studies on food system's financialisation show in detail how a basic good such as food has increasingly become a capitalised asset (Burch & Lawrence, 2013; Clapp, 2019; Clapp et al., 2015). Investors had long considered agriculture as an unreliable and ungenerous source of profit. However, an acceleration in its assetisation has occurred since the 2007–2008 financial crises. They led to an increase in commodity prices, transforming agriculture and food into a potentially consistent source of returns. As a consequence, they immediately became an attractive alternative to traditional investments (Schmidt, 2017; Stephens, 2022). Pension funds, private equity firms, hedge funds, and sovereign wealth funds have been massively investing in food, agriculture and land (Lawrence & Smith, 2018). In this way, hierarchical complexification has reinforced barriers for those who wish to democratise the food system.

By taking into account small, medium, and large hierarchies, we can gain a more nuanced understanding of the complex power dynamics that shape food production, distribution, and consumption in today's world.

4.5.2.2 Saturation of interstices

The saturation of interstices addresses the monopolisation of the circulation of material objects, meanings, and competences, which can impede the transition to sustainable food systems both on the consumption and production sides.

On the consumption side, supermarkets in Europe have expanded rapidly, resulting in a decline of traditional markets and small grocery shops (Blythman, 2004). The rise of supermarkets in Europe has been accompanied by significant changes in the way that people shop for food and household products. Supermarkets have replaced traditional markets and small grocery stores as the main channel for food retail in many parts of Europe, and they have also changed the way that food is produced, distributed, and consumed. In connection to their material expansion, which has put them at the centre of food consumption practices, supermarkets invest in marketing and branding (Lang & Heasman, 2015). They are thereby monopolising the reproduction of food practices in the retail landscape in Western countries. Today, supermarkets are an integral part of the retail landscape in Europe, and they play a key role in the food system (Chatriot & Chessel, 2006; Daumas, 2006).

On the production side, large agribusinesses and monoculture farms control land and resources, restricting space and other material elements needed for small-scale, local, and organic farming practices (IPES-Food, 2016, 2017). The seed industry is dominated by major corporations, such as Monsanto and Syngenta, which control the availability of seeds and promote genetically modified ones, reducing crop diversity. This leads to the marginalisation of traditional and heirloom seed varieties and a decrease in agrobiodiversity (Clapp, 2014; Howard, 2016).

The saturation of interstices is also reflected in the dominance of industrial agriculture and its associated practices, such as synthetic fertilisers and pesticides, resulting in a decline of traditional and agroecological farming knowledge and skills. Increasing automation and standardisation of food production, distribution, and retailing lead to a loss of specialised skills and craftsmanship in various segments of the food system, including artisanal food production, small-scale farming, and traditional culinary practices (Spaargaren et al., 2012). Promotion of ultra-processed and convenience foods by large food corporations influences consumer perceptions and preferences, making it challenging for healthier, less-processed, and locally produced alternatives to gain prominence (Moodie et al., 2013).

On the whole, this saturation of interstices by the monopolisation of the circuits of reproduction of food consumption practices potentially plays a key role in the modest expansion of small-scale, socio-ecological retail practices.

4.5.2.3 Capture

The concept of capture, which refers to the ability of dominant capital groups to integrate elements of alternative practices (material objects, meanings and competence) into their own practices, highlights the limitations of autonomy from conventional food systems. Alternative food networks (AFNs) and conventional food networks often do not operate in distinct spheres but hybridise to some extent (Sonnino & Marsden, 2006). Some initiatives adopt practices similar to conventional food systems, leading to the co-optation of alternative practices by large global food corporations.

Several examples within the capitalist food system illustrate the concept of capture: organic food, fair trade products, plant-based diets, and healthy food. The organic food market has seen the entry of large producers and retailers, leading to a scaling up and industrialisation of organic food production (Guthman, 2004). By adopting some elements of organic farming, they have diluted the original principles, such as the non-use of synthetic chemicals and compliance with higher animal welfare standards, to maintain their competitive advantage in the market (Darnhofer et al., 2010). These powerful companies can reshape organic standards in their own interests (Guthman, 2004; Howard, 2016; Ikerd, 2018; Jaffee & Howard, 2010), integrating the “meanings” of alternative food practices while retaining conventional practices, and thus creating a multibillion-dollar income stream globally (Golijan & Dimitrijević, 2018). The testimony of a food cooperative that I investigated at the beginning of my research, on its website, illustrates this capture:

“The concern is that the organic market is being taken over by the classic distribution system that pushes prices down and/or takes the producers' margins. Is it really better to go back to the classic distribution system, with the same management tools, marketing, etc., but under an organic banner? [...] However, the reality of small producers does not allow them to meet all these requirements. It is therefore easier for the consumer to come and proudly buy his products in large organic stores rather than making several trips to the local producers. Is it really the same? If the organic shop along the main road attracts me with words like ‘local’, ‘ethical’, ‘responsible’, ‘ecological’, ‘sustainable’, will my purchase be as responsible and eco-friendly as if I

had travelled 5 km further to the organic farm in the next village? In most organic shops, next to salads from the local farmer, you can also find peppers from Spain, butter from France, kiwi fruit from Australia, ginger sweets from China and dry goods whose origin is never certain... The consumer's choice of purchases would certainly have been different if he had gone directly to the producer... Doesn't this 'organic business' lose us in all these ethical and responsible sustainable slogans? When you go shopping in an organic supermarket, you have the feeling of being a 'hero', and yet if you analyse the basket carefully, you would feel much less proud of your choices.” (Vandoorne, 2018, mt)

Similarly, the integration of fair trade products into the mainstream market by large retailers and corporations has allowed them to capture the ethical and environmental meanings associated with fair trade (Le Velly, 2006). This involvement can compromise the original goals of the Fair Trade movement, such as supporting small-scale producers and promoting environmentally friendly practices (Raynolds, 2012).

Additionally, the growing popularity of plant-based diets has led large food corporations to enter the alternative meat market. By incorporating plant-based products into their portfolios, they have captured the environmental and health meanings of this alternative practice, which may lead to concerns about the original goals of promoting a plant-based diet for environmental and health reasons (Tziva et al., 2020).

To saturate consumers with their ultra-processed products (as mentioned in the previous section), food corporations have also captured health claims and food labelling. Their means include “funding and conducting in-house nutrition research related to their products; sponsoring scientific seminars and expert meetings; involvement in scientific standards and policy committees; publishing in scholarly journals; funding scientific front groups; and delivering nutrition education programmes” (Scrinis, 2020, p. 1).

These examples show how the concept of capture plays out in the capitalist food system. Alternative practices and ideas can be absorbed, integrated, or co-opted by dominant capital groups, potentially compromising their original goals and values. The dialectical nature of capture, however, suggests that it is not a one-way process, and the outcomes of these dynamics are complex and unpredictable.

4.5.2.4 Rupture

Rupture within the transition to sustainable food systems can be understood as power processes actively seeking to generate breaks and discontinuities in interstitial, symbiotic

and ruptural transformations. Utilising concepts from SPT, these breaks can be observed in the circulation of material, meanings, and competence elements, as well as in links between elements and links between practices.

The growth of organic practices, which underpin many degrowth initiatives related to food, has a long history of opposition from propagating a blend of information and misinformation about organic food quality and safety to halting its progression (Cummins & Lilliston, 1997; Ismond, 2007). In a recent example, the CEO of Syngenta, one of the leaders in the agrochemical industry, belonging to China National Chemical Corporation (ChemChina) took a strong position against organic food, in the wake of the issues in global food supply chains following Russia's invasion of Ukraine in 2022: "Depending on the product, yields in organic farming can go down 50 percent. The indirect consequence is that people in Africa are starving because we are eating more and more organic products" (DeAndreis, 2022). This tentative rupture of positive meanings associated with organic food was interpreted as an attempt to smash the EU Farm to Fork Strategy (Dahm, 2022; Zachová, 2022) – which officially aims to enable and accelerate the transition to a fair, healthy and environmentally-friendly food system. This can be seen as an attempt to sabotage symbiotic transformations as well as the interstitial transformations building on organic principles.

4.5.3 Towards more synergies between interstitial, symbiotic and ruptural transformations?

While degrowth scholarship and activists have mostly focussed on interstitial transformations when it comes to transforming the food system, a synergetic dynamic with symbiotic and ruptural transformations may be usefully considered (see Section 4.3.4).

One example of potential symbiotic transformation that is in line with degrowth principles is the advocacy and implementation of a *social security for food* (ISF-Agrista, 2019; Paturel & Bertrand, 2021). While community-oriented sustainable food initiatives proliferate, they are often criticised for carrying a certain social elitism (Allen, 2004; C. Hinrichs & Kremer, 2002), for being vehicles of cultural domination (Slocum, 2007) and for involving people who have the material capacity to buy products at higher price levels on average (Chiffolleau & Prevost, 2012). The idea of social security for food seeks to make quality, sustainable food from peasant agriculture accessible to all, regardless of

financial means. By extending the existing structures of social security, each citizen would receive a certain amount of money reserved for the purchase of food from authorised actors, based on participatory criteria developed by citizens at the local level. It is a project that aims to reconcile the social and the environmental at the food level, to build the foundations of a food democracy, by expanding the many initiatives created as interstitial transformations and to open a breach in the industrial food system allowing us to envisage a post-capitalist horizon (ISF-Agrista, 2019).

Degrowth scholarship has not advocated for or studied specific ruptural transformations in the food system so far (Plank, 2022). However, lessons could be learned from anti-corporate campaigns (Jones et al., 2006) and actions by the food sovereignty movement (Patel, 2009), for instance. Connections could also be made with labour unions that oppose hierarchical power from the inside of food companies. Ruptural transformations would include any action to make food corporations and allied governments accountable for the damages provoked to socio-ecological systems. These disruptions can encompass material, meaning and competence dimensions.

Rupture in the circulation of material elements can be illustrated by activists across Europe who have destroyed GMO crops in an effort to protest against genetically modified organisms (GMOs). In France, for instance, “Volunteer Reapers” (Faucheurs Volontaires) have targeted GMO test fields, sparking public debates regarding the safety and ethics of GMOs in the food system, and also bringing about a change in meanings (Stockelova, 2009). Another example is given by Greenpeace, which has launched several campaigns against Nestlé, accusing the company of deforestation and habitat destruction as a result of palm oil production in Indonesia. In order to raise awareness of the issue, Greenpeace activists protested at Nestlé's headquarters in Switzerland in 2010, diffusing a fake KitKat commercial. Nestlé eventually agreed to a zero-deforestation policy and tighter palm oil sourcing standards (Syarifuddin et al., 2020).

In sum, this section has highlighted the need for additional study and practice with regard to how symbiotic and ruptural transformations can be more successfully combined with interstitial transformations, thereby triggering a wider and more holistic shift to sustainable food consumption in the face of sabotage.

4.6 Discussion

This chapter has attempted to bridge a gap in degrowth scholarship by providing a comprehensive exploration of the challenges to the emergence of degrowth transformations. It has developed a theoretically grounded typology of modes of sabotage, and potential impediments to these transformations, to offer a more precise and nuanced understanding of the dynamics at play. This exploration was guided by the application of SPT to Erik Olin Wright's (2010) transformation strategies typology: interstitial, symbiotic, and ruptural transformations. Although these strategies have gained increasing attention in degrowth literature, the focus has primarily been on the relationship between interstitial and symbiotic transformations. This chapter, however, has broadened the scope to encompass the role of ruptural transformations, in line with recent developments in degrowth strategic thinking.

The model proposed herein offers an integrative perspective on various modes of degrowth transformation and sabotage, highlighting their interconnectedness and the complexity of their dynamics. This perspective moves beyond “the economy” (see Section 2.4), acknowledging the interconnected processes involving powerful capitalist entities and which inhibit degrowth transformations. Based on these fundamentals, two additional elements of dynamics have been proposed towards a theory of change for degrowth, providing a more comprehensive model for understanding the dynamics of degrowth transformations.

The modes of degrowth transformations, as interpreted through the lens of SPT, offer a nuanced understanding of these processes. Interstitial transformations denote the gradual creation of a new society within the cracks of the existing one, challenging dominant social relations with alternative modes of thinking and interacting. Symbiotic transformations concentrate on enhancing existing practices and institutions gradually, often involving policy changes and collaboration across classes. Ruptural transformations, on the other hand, involve abrupt shifts in capitalist society, fostering new institutions through the disruption of existing ones.

The first of the two dynamics developed in this chapter (**Element of Dynamics V**, see Section 4.3.4) emphasises the interdependence and mutual support between interstitial, symbiotic, and ruptural transformations. Interstitial transformations, involving the experimentation with changes in autonomous spaces outside the capitalist system, lay the groundwork for the emergence of alternative practices. These transformations

challenge the growth paradigm by circulating new meanings, materials, and competences. Symbiotic transformations build on the foundation laid out by interstitial transformations to reshape society's practices and relations. Ruptural transformations, in turn, directly confront existing capitalist structures, creating room for new practices. These transformation modes are interconnected and mutually reinforcing, contributing to the overall degrowth transformation process.

The second element of dynamics about the “modes of sabotage” of degrowth transformations (**Element of Dynamics VI**, see Section 4.4.5), elucidates the broad strategies utilised by capitalist forces impeding the potential of degrowth transformations. These modes of sabotage may actively restrict and curtail degrowth transformations and help maintain differential accumulation. Hierarchical complexification, through the expansion of co-dependent practices, results in practice hierarchies centred around capitalisation and differential accumulation. This process, along with the saturation of interstices, restricts the emergence and progress of alternative practices.

Capitalist groups can co-opt alternative practices, diluting or abandoning the alternatives' original goals and values, thereby furthering hierarchical complexification. They may even utilise rupture as a form of sabotage, disrupting degrowth transformations to undermine resistance to their power. These processes – hierarchical complexification, saturation of interstices, capture, and rupture – pose significant challenges to the transformative potential of degrowth practices.

SPT's contribution to this discussion is its ability to illuminate the interconnectedness and dynamic nature of these transformation modes. This theory highlights the dynamic and contested nature of these change and hindrance processes. Thus, SPT offers an alternative or complementary perspective for understanding societal change, moving away from more reductive, compartmentalised, or deterministic interpretations offered by economic or political economy explanations.

In addressing these modes of sabotage, a suite of counteractive principles can be proposed for the degrowth movement. Rather than offering concrete strategies or actions, this discussion emphasises a more conceptual framework for reflection and potential actions to stifle the sabotage:

- To counter **hierarchical complexification**, a key principle for degrowth transformations could involve an active promotion of practices that distribute

power evenly, such as worker cooperatives, democratic grassroots and progressive reforms within existing institutions. Crucially, it may involve transforming hierarchical institutions – such as social security and other elements of the welfare state – ungluing them from capitalisation practices and putting them under deeper democratic control. On the whole, it requires severe criticism and challenge of the practices that centralise power, and strategises on ways to disrupt and dismantle hierarchical systems focussed on differential accumulation – which emphasises the crucial need for ruptural transformations (see Section 4.3.3), such as highlighted in the discussion on “exnovations” (Fossati et al., 2022). Nevertheless, it is crucial to comprehend that hierarchies, inherently, possess dynamic and adaptable characteristics. Similar to their inability to be conclusively established, they also cannot be conclusively eradicated. The perpetual transformation, fluctuation, and reshaping of hierarchies are driven by the interplay of power dynamics. This highlights the significance of maintaining a flux of alertness and flexibility. The objective is not to attain a fixed condition of non-hierarchy, but rather to cultivate a setting where hierarchies are consistently scrutinised, evaluated, and reconfigured in accordance with degrowth principles, including democracy and equality, rather than finance.

- In tackling the **saturation of interstices**, a crucial principle is the creation and safeguarding of spaces where alternative practices can emerge and evolve, whenever possible. Strategies that resist the monopolisation of practices' circuits of reproduction by capitalist forces are essential, as is the establishment and preservation of protective spaces for alternative practices – as highlighted by *Transitions Studies* (Smith & Raven, 2012). Additionally, the circuits of reproduction of capitalist practices that saturate interstices should be identified and tackled at the relevant level. A view informed by SPT might help to design effective approaches.
- Degrowth dynamics may help prevent **capture** by dominant capital by a vigilance by observing, analysing and possibly undermining the co-optation of meanings, materials, competences, in complexes of capitalist practices. But it should be acknowledged that capture is a dynamic process on which those involved in the practices being captured have little control. As such, capture may be, to a large extent, inevitable, and as mentioned in Section 4.4.3, it is a dialectical process. In

this way, degrowth transformations may try to continually build on captured elements, renew their critique and build new practices.

- Additionally, building resilience regarding the reproduction of the practices underpinning degrowth transformations is essential to counteract **rupture**. This could involve the ongoing creation of networks where practices can flow and material, meanings and competence elements can circulate; and in doing so, reducing or compensating disruptions of circuits of reproduction essential to degrowth transformations.

These counteractive principles should not be viewed as isolated strategies but rather interconnected elements of a broader approach to resisting and counteracting capitalist sabotage. It is probably insufficient to rely solely on any one approach in isolation, the inherent power resides in the synergistic relationship among interstitial, symbiotic, and ruptural transformations. Each of these modes of transformation pertains to distinct aspects of the challenges presented by capitalist dynamics. By integrating these approaches, degrowth transformations can effectively address the complex challenges posed by sabotage in a comprehensive and resilient manner. The process can be likened to the intricate art of tapestry weaving, where every individual thread, representing a distinct transformational approach, plays a crucial role in enhancing the overall structural integrity and aesthetic composition. It is crucial for degrowth transformations to retain a holistic perspective, acknowledging the interplay between different modes of sabotage and developing comprehensive strategies that address these interconnected threats.

Finally, while this chapter presents theoretically grounded typologies for both degrowth transformations and modes of sabotage, it is essential to recognise key limitations. The focus remains on general processes, with a theoretical approach that encompasses diverse context-dependent empirical phenomena. While they have been illustrated with empirical studies on food system transformations, the typologies should be tested against empirical data and refined accordingly to be more robust and informative. Utilising both qualitative and quantitative methods could yield a richer exploration of these empirical dynamics and a more nuanced understanding of how they translate into the quantitative representation of power by capitalists.

On the whole, this chapter aimed to contribute to the degrowth scholarship by providing a comprehensive understanding of the interplay between degrowth transformations and modes of sabotage. It has emphasised the importance of recognising

these dynamics in the development of strategies for promoting sustainable and equitable socio-ecological transformations. As we move forward in the pursuit of a post-growth society, this understanding will prove valuable in navigating the intricacies of degrowth transformations and the imposition of capitalist power.

4.7 Conclusion

To contribute to the emergence of a post-growth society, it is necessary to build a comprehensive understanding of the processes by which degrowth transformations are inhibited by capital accumulation. The power of dominant capital is never complete though, since, on the one hand the social world is made of partially unintentional and uncontrollable practices, and on the other hand, the exercise of power always implies a form of resistance. In this chapter, I have attempted to fill a gap in the degrowth scholarship by dissecting the intricate dynamics that underpin degrowth transformations and their potential obstacles. Drawing on SPT and Wright's transformation strategies, I have proposed two elements of dynamics that elucidate interconnected *modes of degrowth transformations* and their possible *modes of sabotage* – drawing on Veblen's concept extended by Nitzan and Bichler (see Section 3.3.4).

The complex, interwoven relationship between degrowth transformations and modes of sabotage underscores the need for an informed, multifaceted approach to counteracting capital accumulation. The concepts of interstitial and symbiotic transformations highlight the potential for change from within the system, while the notion of ruptural transformation underscores the potential for more radical, system-disrupting change. Yet, each of these transformative modes is susceptible to corresponding modes of sabotage, including hierarchical complexification, the saturation of interstices, capture, and rupture, which serve to maintain and enhance capital accumulation.

Hierarchical complexification, an augmentation of differential power through the expansion of co-dependent practices centred around capitalisation and differential accumulation, develops into a full spectrum of interrelated practice hierarchies – from everyday consumption practices, to the industrial level, the integration of corporations and government organs, and the adoption of broad concepts and symbols subordinating our ways of thinkings. This process, along with the saturation of interstices, restricts the emergence and growth of alternative practices. However, the inherent fluidity and

adaptability of social practices mean that there are always potential avenues for resistance and transformation.

Capitalist groups may also employ capture and rupture as strategies to dilute or disrupt degrowth transformations. Capture involves the co-optation of alternative practices, integrating elements of these practices into capitalist ones to neutralise their transformative potential. Meanwhile, rupture represents an intentional disruption of degrowth transformations, serving to undermine resistance to capitalist hegemony.

Yet, in acknowledging these potential impediments, we must also recognise the inherent potential for resistance and transformation embedded within social practices. While the exercise of power may limit the possibilities for transformation, it can also provoke resistance, creating openings for alternative practices to emerge and flourish.

The analysis presented in this chapter, therefore, offers not only a clearer understanding of the processes by which degrowth transformations may be inhibited but also a framework for understanding the potential for resistance and transformation. As we navigate the complexities of the transition to a post-growth society, this understanding will be invaluable in identifying opportunities for intervention and change.

However, the journey towards comprehending systemic change is far from complete. These elements of dynamics, while critical, form only a part of a larger, complex puzzle. The multifaceted nature of the interplay between degrowth and capital accumulation necessitates a more comprehensive perspective. In the forthcoming chapter, I will utilise the elements of dynamics elaborated in this chapter to assemble a more holistic understanding of systemic change. Through the application of a combined CLD and exploratory scenarios, I aim to illustrate the potential pathways through which degrowth transformations can unfold amidst the pressures of capital accumulation. This next stage of exploration is pivotal for grasping how we can effectively manoeuvre through the challenges that await us in our quest for a more sustainable and equitable future. The insights we have gained thus far serve as a stepping stone, guiding us as we navigate the broader narrative of degrowth and systemic transformation. Through this continued analysis, we will edge closer to a comprehensive understanding of the unfolding of degrowth transformations.

5 The (non-)unfolding of degrowth: From the elements of dynamics to alternative pathways

“I’m a pessimist about probabilities; I’m an optimist about possibilities.”

— Lewis Mumford (quoted in Winfrey, 1977)

5.1 Introduction

This chapter embarks on an exploratory journey. While the elements of dynamics for a theory of change are crucial, they alone cannot capture the full manifestation of a profound, system-wide transformation. They are rather threads that, when woven together, create a rich tapestry. Drawing upon the six causal loop diagrams (CLDs) introduced earlier, I create a comprehensive and dynamic picture of potential futures. I dive deeper into a holistic perspective, scrutinising the complex interplay between degrowth and capital accumulation through the lens of an integrated CLD and the carefully crafted narratives of exploratory scenarios.

Following the presentation of the “assembled CLD”, the chapter develops four exploratory scenarios to illustrate the potential pathways for the unfolding of degrowth transformations¹¹⁴ in the face of capital accumulation. Scenarios help visualise the potential directions in which the system can evolve (De Jovenel, 2000; Haraldsson & Bonin, 2021) and thus clarify the diagram associated with the proposed theory of change (Tomoaia-Cotisel et al., 2017). This study examines the power dynamics between degrowth transformations and the capitalist mode of power through four scenarios. Scenario I illuminates a world that continues to shape itself without significant, explicit disruption. It is a reference point, but nothing is assumed about its “probability” of

¹¹⁴ See the definition in Table 1, p. 7 (Section 1.2.1) and the typology of modes of degrowth transformation in Chapter 4.

occurrence. Scenarios II and III highlight key difficulties in the revolutionary changes envisioned by the degrowth project. Scenario II focusses on degrowth transformations mushrooming in the interstices of capitalism, combined with intensifying environmental upheavals, and how it could influence the formation of dominant capital. Scenario III considers a victory in the battle against growth and GDP, but degrowth transformations are heavily sabotaged by dominant capital groups, which continue to rule in a society that does not align with degrowth principles. Finally, Scenario IV imagines the transition from capital accumulation and growth to decisive resistance resulting from a combination of interstitial, symbiotic and ruptural transformations.

These scenarios can help identify the potential hurdles and challenges that may need to be addressed in the unfolding of degrowth transformations. Exploratory scenarios provide a more accessible and understandable way of presenting complex information and stimulate discussion and debate on the possible future trajectories of the system. This can help reflect on the underlying theory of change and how it could be expanded or refined in the future.

This chapter presents an overview of the six elements of dynamics and their connexion to each other in Section 5.2, followed by the combined CLD. Section 5.3 describes the development of the exploratory scenarios, and Section 5.4 presents the four contrasted scenarios. Section 5.5 summarises the main findings of the chapter and discusses the implications of the scenarios and concludes the chapter with final reflections. As it builds on the groundwork laid in previous chapters, this chapter is the last step before the conclusion of this thesis.

5.2 Assembling elements of dynamics

This section synthesises the intricate relationship between transformations and capitalist power dynamics, aiming to uncover potential pathways towards a more just and sustainable future. Through the connection of six elements of dynamics, the research delves into the socio-ecological processes, power relations, and elements of dynamics that underpin the interplay between degrowth and capital accumulation. The analysis focusses on how capitalist power is imposed, maintained, and challenged, as well as the transformative potential of degrowth practices in fostering transformative change. Ultimately, it highlights the importance of understanding and countering the modes of sabotage employed by capitalist forces, as these represent significant barriers to the

advancement of degrowth transformations and the realisation of a more just and sustainable world.

5.2.1 Elements of the dynamics

Element of dynamics I (Interplay between capitalisation and degrowth transformations, see Section 3.2.5) suggests that the dynamic between degrowth transformations and capital accumulation involves a complex interplay of socio-ecological processes and power relations. Degrowth transformations, which encompass grassroots alternatives, institutional reforms, and opposition to capitalist hegemony, can challenge capitalist power – differential capitalisation – by undermining expectations of future earnings, increasing perceived risk, and questioning the fundamental principle of capitalisation and profit-making. In response, capitalist groups may attempt to reshape the socio-ecological world to their advantage, potentially reducing the space for degrowth transformations. Environmental events may also lead to shifts in the patterns of differential accumulation. The intensity and effectiveness of degrowth transformations are not predetermined but are contextual. This dynamic can lead to either exponential progress in degrowth transformations or greater capitalist power, depending on the initial conditions and the relative abilities of both forces to challenge and influence each other.

To understand how capitalist power is imposed, **Element of Dynamics II** (Capitalist power imposition and resistance, see Section 3.3.6) focusses on the dynamics of the largest corporations and their allies in government entities and other institutions to control strategic aspects of society for differential accumulation. It explains that profit generation in capitalism is not only driven by innovation and production but also by wide-ranging social, ecological, and legal processes undertaken by firms and their connections with government entities. This involves processes that prevent, restrict, exclude, or disable – which are called sabotage – impeding or disabling both capitalist and non-capitalist opponents. Sabotage can hinder resistance and provoke opposition. The capacity for sabotage depends on the interrelationship between major corporations and government organs, which can intensify as they shape the world against resistance. Consequently, the potential for degrowth transformations relies on the enfoldment of corporations and government organs and the forces that counter this dynamic.

Expanding on this notion, **Element of dynamics III** (Power foundations of growth, see Section 3.4.3) draws on CasP's hypothesis that capitalism is power-driven

rather than simply growth-driven. Hierarchical power processes, or sabotage, involving corporations and governments necessitate significant amounts of energy and resources to maintain control over the resistance they provoke – although ecological economics tells us that energetic-material growth cannot continue forever. In turn, a more hierarchical organisation of capitalism facilitates the capture of energy and extraction of materials. Two differential accumulation regimes can be observed: breadth, associated with productive expansion and amalgamation, and depth, relating to cost-cutting measures and differential price increases (stagflation). These regimes tend to move countercyclically to one another, ultimately supporting each other. However, these regimes are not predictive laws of motion and can fail due to opposition, inner conflicts, or incompetence. Consequently, the future of capitalism, sabotage, and energetic-material growth is fundamentally open, allowing for the possibility that dominant capital may loosen its grip on society (including human-nature relations), potentially leading to the end of the capitalist mode of power.

Element of dynamics IV (Asymptotes of power, see Section 3.5.2) highlights how the more sabotage occurs, the more difficult it becomes to extend because of the increasing resistance, which makes capitalist power vulnerable to drastic changes. Capitalisation tends to be less forward-looking as capitalists become increasingly uncertain about their ability to maintain their mode of power – this is “systemic fear”. For the capitalist mode of power to end, the dominant capital groups must lose confidence in their ability to shape society against resistance. Degrowth transformations may undermine not only the power of these dominant groups but also their capacity to foresee the future and engage in sabotage. If the process of capitalisation, which organises society and measures capitalists’ confidence in their ability to rule, derails, it may pave the way for systemic change, including in line with degrowth principles.

Holistic change can be brought about with the three interconnected modes of transformation described by **Element of dynamics V** (Interconnected modes of transformation, see Section 4.3.4). Interstitial transformations lay the groundwork by experimenting with autonomous alternatives at the margins of the capitalist creorder, thus fostering alternative futures. Symbiotic transformations then build upon and reinforce these interstitial efforts, modifying society’s practices and creating a mutually nourishing relationship between the two. Ruptures directly challenge capitalist structures, which, in turn, open gaps for new practices to emerge. These three modes of transformation

collectively interact, support, and amplify one another, creating a powerful and dynamic synergy that drives change.

However, **Element of dynamics VI** (Modes of sabotage of degrowth transformations, see Section 4.4.5) highlights four modes of sabotage that inhibit the modes of degrowth transformation: hierarchical complexification, the saturation of interstices, capture, and rupture. Hierarchical complexification within capitalism promotes the subordination of parts of society on capitalisation and differential accumulation. This process, along with the saturation of interstices, can obstruct the emergence and effectiveness of interstitial practices. Capitalists may capture interstitial and symbiotic practices, diluting their original principles in wider capitalist practices, and using rupture to undermine resistance, thus hampering degrowth transformations. As a result, understanding and countering these modes of sabotage are essential for advancing the degrowth project.

While the elements of dynamics were described separately in the previous two chapters, they are combined into a single CLD to show their interconnectedness (see Figure 15). In addition, it provides a comprehensive view of the main processes of the theory of change that I am developing in this research.

5.2.1 An assembled causal loop diagram

“All models are wrong, but some are useful.”

— George E.P. Box (Box & Draper, 1987, p. 74)

In this section, I introduce an assembled CLD that brings together the diverse elements of dynamics explored previously. However, given the intricate nature of this CLD, I have opted to present it in a more readable format by dividing it into two separate figures: Figure 15 and Figure 16¹¹⁵. This division is designed to improve readability, while central variables – “Unfolding of degrowth transformations” and “Sabotage by dominant capital groups” – have been replicated in Figure 13 to ensure continuity and coherence between the two diagrams.

¹¹⁵ Furthermore, to facilitate comprehension, some variables from the elements of dynamics have been slightly simplified.

However, I would like to emphasise that for the sake of clarity, I have not included the (too) numerous contextual factors that could influence each element in the diagrams and that were not directly addressed in this research. The processes are represented in a simplified, generic manner, acknowledging that their actual unfolding also depends from other variables, that might be context dependent. It is important to bear this in mind and remember that the CLD cannot capture the full complexity of systemic change (see Section 1.4.4.4), although it provides a useful visual tool for understanding the interconnected dynamics of degrowth transformations.

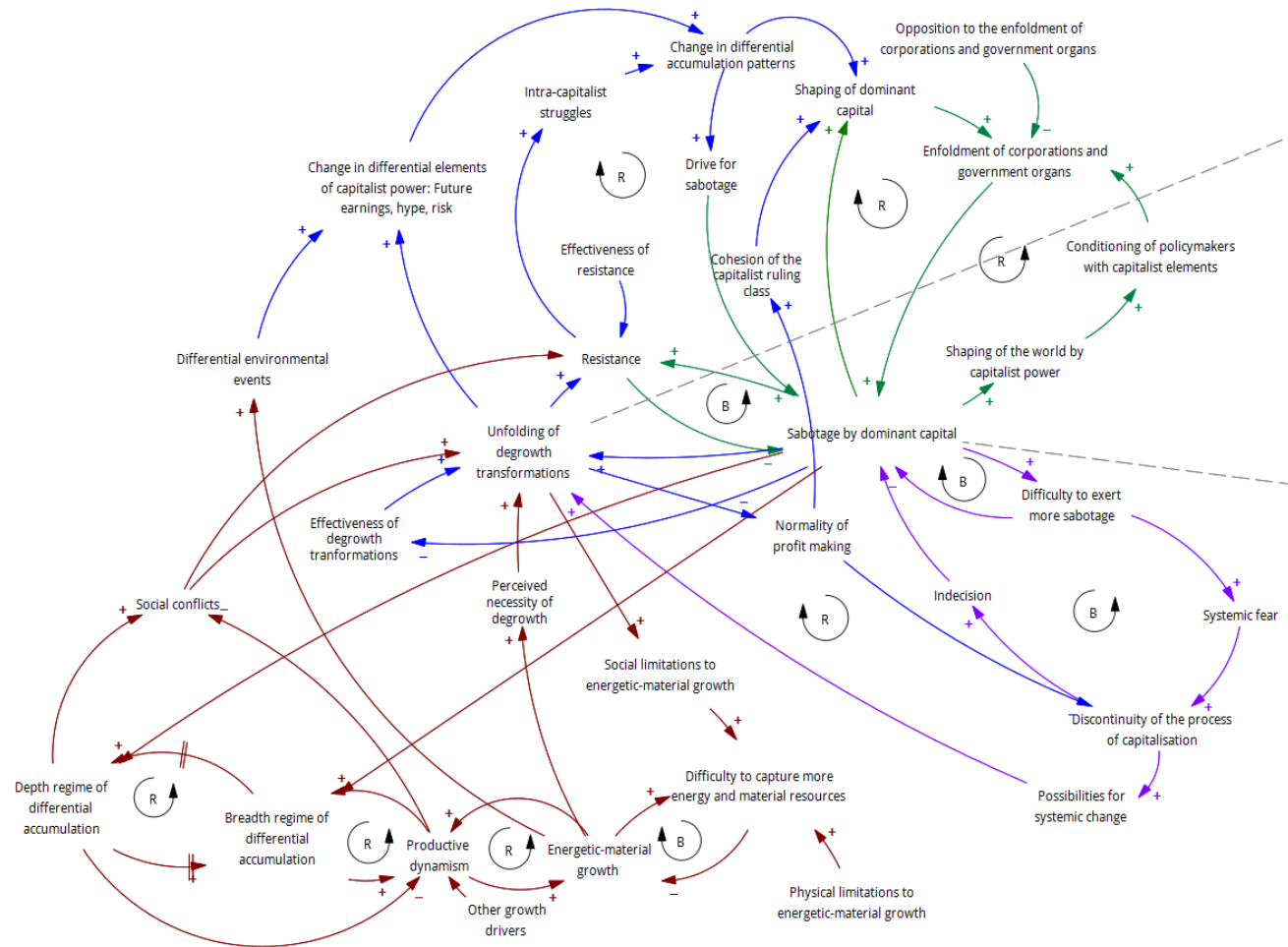


Figure 15. Causal loop diagram assembling the elements of dynamics for degrowth's theory of change against capital accumulation (1/2).

Note: Each colour corresponds to an element of dynamics (ED): blue, EDI; green, EDII; red, EDIII; purple, EDIV.

5.3 Exploratory scenarios: Why, what and how?

How does the overall dynamic develop? Scenarios provide a reflective space to not only consider the future but also challenge the present. They serve as a powerful tool for illustrating important potential outcomes of a theory of change, assisting readers in visualising and comprehending how it might manifest in practice. Indeed, the assembled dynamics may be difficult to visualise because CLDs, as simplified representations, do not indicate the relative importance of specific connections. Consequently, without further clarification, it is challenging to discern which connections, processes, and feedback loops hold the most significance for the dynamic as a whole (Barbrook-Johnson & Penn, 2022). In this case, the ambiguity allows for substantially different trajectories.

Barbrook-Johnson and Penn (2022) argue that “[i]t can be useful to create mock-up plots of variables through time to explore how the system might behave” (p. 53). “Mock-up plots”, or scenarios, are, in this case, narratives about the future – as the research question is more about potentialities than past dynamics. Among them, exploratory scenarios are designed to explore a range of possible futures rather than to predict a single trajectory. These narratives are developed by making assumptions about key drivers and uncertainties, and they are necessarily fictional: “A scenario is not the future reality but a means of representing it in order to clarify present action in the light of possible and desirable futures” (Godet & Roubelat, 1996, p. 28, mt).

In *Futures Studies*, two of the most prominent approaches are *exploratory* and *normative* scenarios, each rooted in distinct schools of thought. The exploratory approach, often associated with “foresight” or “prospective”, seeks to understand possible futures based on past dynamics and potential disruptions (Godet & Durance, 2011; Godet & Roubelat, 1996). This approach is more about “in which ways the future could unfold”. On the other hand, the normative approach is closely tied to the backcasting school. It starts with a vision of a desired future and then works backward to identify the steps and decisions necessary to achieve that future (Vergragt & Quist, 2011). This approach is more about “how can we achieve some desired outcome”.

The exploratory approach is the most consistent with this research’s aims (see Section 1.3), which seeks to explore *possible* ways of unfolding degrowth transformations against the process of capital accumulation. I develop four exploratory scenarios, three of which explore the difficulty of degrowth unfolding from within capitalism. The last one

should be desirable from a degrowth perspective – and become *de facto* a normative scenario from this perspective (Gaßner & Steinmüller, 2018).

Through this exercise, I aim to provide a more comprehensive picture of how the theory of change might unfold in different contexts, helping readers better understand and engage with the ideas underlying the elements of dynamics for the theory of change. Scenario generation enhances the analysis of complex situations and issues by supporting systemic thinking, revealing interdependencies and recursive reinforcement or limitation processes (Meinert, 2014).

According to De Jouvenel (2000), exploratory scenarios incorporate three main elements: the base, pathway, and final images. The base draws on a coherent representation of the current system analysed in dynamic terms. In this case, the base is made up of a combination of six elements of dynamics into an assembled CLD (see Section 5.2.1). Pathways are developed by evolving the system and considering a logical sequence of events linking the present to the future. The final images are the logical outcome of the trends described. These “final” images are, in my view, rather “finite” images because they do not describe a state of equilibrium, as if the time had stopped, but rather “pictures” of a movement. In the context of this research, scenarios are first described with the theoretical language used previously, for conceptual precision, as they describe more the key dynamics at play than simple “sequence of events” – this ensures a smooth progression between theory and more concrete fiction. They are complemented by short stories which communicate the scenario in a more engaging and narrative way. As Poli (2019) indicates:

“The description should also be engaging and very concrete; the first person usually works well. Just imagine that you are in the situation and have to make decisions: what are the problems you see? What are the opportunities? [...] In the end, each scenario should be reduced to a short story of about one page” (p. 79).

De Jouvenel (2000) warns that creating too many scenarios can be risky because it may lead to confusion and thus overlook the most significant options and their outcomes. It is usual to emphasise a few contrasting configurations. The elaboration and delineation of scenarios can be accomplished through various techniques, depending on the research context, objectives, and resources. Three of the main techniques used in exploratory futures studies are the 2x2 matrix, morphological analysis, and generating scenarios based on disruptions (Futuribles, 2023). The binary or 2x2 technique delineates four scenarios

pivoted around two distinct axes of uncertainties (see e.g. Poli, 2019). For *Futuribles*, this methodology is chiefly appropriate for less intricate subjects, and its results may occasionally manifest as somewhat reductionist. Conversely, scenario generation via morphological analysis (Godet & Durance, 2011) assimilates between 15 and 30 “variables” (similar to broad processes), after a meticulous retrospective and prospective evaluation, an exhaustive period of rigorous engagement with participants, and typically culminating in a set of three to five well-articulated scenarios. Lastly, scenario creation centred on a significant disruption accentuates specific transformative events, probing the attendant trends and potential ramifications linked to such profound shifts (e.g. Désaunay & Ségur, 2023).

The last method, disruption-based scenarios, will be the main source of inspiration in this chapter. First, degrowth as a concept fundamentally challenges the predominant paradigm of economic growth and thus inherently revolves around potential “disruptions” or transformative shifts in economic thought and practice. Second, CLDs, with dynamic loops, lend themselves to this method better than to a 2x2 technique, which is more suited for simpler dynamics. Third, by “playing” with the assembled CLD, exploring possibilities to identify dynamics of interest, my approach is similar in some aspects to a morphological analysis. However, while a proper morphological analysis could be useful for extending this scenario generation exercise, for example, in a particular sector, territory, or political area, it would be a research project in its own right requiring significant resources.

5.4 Four scenarios

In this case, I limit the number of scenarios to four to avoid unnecessary complexity and show contrasting dynamics. To achieve this, for each scenario, I place more importance on a particular set of processes in each case, which leads to different distributions of power and drives the overall dynamics of change in different directions. Specifically, the selection of the four scenarios is driven by the desire to explore a broad and diverse range of possibilities, framed by the central conflict under investigation in this research: the struggle between degrowth transformations and the dynamics of capitalist power. The description of these dynamics leads to the depiction of finite images of an ever-evolving world.

It is commonly accepted that scenarios should be driven by a question and extend over a certain time horizon (De Jouvenel, 2000; Meinert, 2014). Evidently, the question is the research question of this PhD thesis: *How can degrowth transformations unfold against the process of capital accumulation?* The time horizon is arbitrary because there are no quantitative trends depicted in the scenarios and I do not intend to predict time dynamics. What matters the most in these scenarios are the causal relationships between the processes and *how* they could occur, rather than *when* they could occur. However, it is obvious that scenarios for the next decade or century would not take the same shape. I define the time horizon as the next 30 years, which is a common horizon for many projections, not too far away but far enough to imagine disruptions. They occur in an ideal-typical (Weber, 1949) Western capitalist society.¹¹⁶

The four scenarios can be summarised as follows:

1. **Transformative efforts in the shadows of dominant capital:** In this scenario, there is intentionally no significant break with the past. This scenario envisages a potential future where dominant capital groups maintain their stronghold on socio-ecological processes, particularly those involved the most in the material-energetic growth of our societies. This makes the transition to degrowth challenging, if not impossible, within the chosen timeframe. By exploring this scenario, I highlight the dynamics of differential accumulation and sabotage explored in Chapters 3 and 4.
2. **Dance between emerging degrowth practices and “greener” rulers:** The disruption considered is that degrowth transformations, combined with intensifying socio-environmental shifts, contribute to the circulation of transformative ideas in line with degrowth principles. Many degrowth-oriented practices flourish within the interstices of capital accumulation. However, these ideas also undergo strong capture and rupture by specific dominant groups, while key power processes remain unchallenged. This leads to a shifting the distribution of power *within* dominant capital: the differential power of some groups is tamed, whereas for others, it is boosted.

¹¹⁶ Western society is where the idea of degrowth emerged and is still largely focussed and remains the main source of evidence for the relations depicted in the elements of dynamics. Further research could be conducted to adapt these scenarios to specific contexts.

3. **Navigating the tides of post-growth capitalism:** The disruption included in this scenario relates to the fading of growth as a dynamic and policy objective. While this was one of the demands emerging from the degrowth debate, it has been skilfully captured by dominant capital to maintain its differential power. The latter relies more heavily on “depth” accumulation cycles to continue to accumulate. It challenges the idea that post-growth capitalism is paradoxical.
4. **Holistic degrowth shift:** This scenario illuminates a future where the degrowth project gains significant prominence, leading to a swift transition away from growth, while subverting the hierarchical power of dominant capital. This scenario serves as an optimistic outlook for anti-capitalist proponents of degrowth, speculating on possible paths that might lead to a post-growth society beyond capital accumulation.

These scenarios are not predictions,¹¹⁷ but speculative narratives representing only a few aspects of a few scenarios among the infinite number of possible futures. By offering contrasting characteristics, they highlight different potential pathways and outcomes.

The next four sections describe these scenarios. For each scenario, the key assumptions for elements of dynamics are described, a modified CLD then highlights the important relations related to this scenario, and finally, a narrative storyline puts the conceptual model in motion in an engaging way – including illustrations within food system transformations.

5.4.1 Scenario I: Transformative efforts in the shadows of dominant capital

In the first scenario, dominant capital groups, especially those central to extractive dynamics such as energy corporations, the electronic industry, and food corporations, maintain a strong grip on socio-ecological processes, thereby impeding degrowth transformations. These powerful entities, which are deeply intertwined with governing bodies, shape dominant capital, while socio-ecological activists offer minimal opposition. Their influence perpetuates cycles of growth in both breadth and depth, characterised by

¹¹⁷ As Poli (2019) contends, “scenarios are not assigned probabilities, and it would be a serious methodological error to do so. [...] Scenarios are needed precisely because we have no idea of what will happen; we do not know if one of them will occur, which one it might be. The scenarios aim to better understand the profound changes that are taking place and contribute to the development of more flexible strategies.” (p. 79)

low growth but differential accumulation by dominant capital. Despite the unpredictability of socioecological conditions that engender systemic fear, these capitalists use their power to prevent the collapse of the system. Meanwhile, degrowth transformations continue to be marginalised, largely because of the effective sabotage strategies employed by dominant capital groups, such as hierarchical complexification, saturation of interstices, capture, rupture, which ensure capitalist practices to remain dominant.

ED I: Interplay between capitalisation and degrowth transformations

Degrowth transformations lack the scale and influence to significantly affect the confidence of dominant capital groups in their income flows, depending on future earnings, hype, risk, and the normal rate of return. The key global groups at the core of what Di Muzio (2015a) calls “Carbon capitalism”, which are fuelling the material-energetic growth of our societies, especially energy corporations (see Section 3.3.1), carry all their weight in conflicts between capitalists. They are under little threat from activists aligned with socio-ecological objectives such as degrowth.

ED II: Capitalist power imposition and resistance

Leading corporations continually intertwine with governing bodies and other key institutions moulding dominant capital. While these dominant capital entities engage in acts of sabotage, they face minimal opposition from non-capitalist groups. The global landscape is persistently influenced by capitalist power, and those in positions of authority are guided by these dynamics. This only further reinforces the close relationship between corporations and governmental institutions. While resistance is triggered within society, the power of dominant capital groups is unmet.

ED III: Power-driven foundations of growth

Dominant capital groups persist in harnessing society to sustain their power through both breadth and depth regimes of differential accumulation. During breadth cycles, the control of firms becomes increasingly concentrated due to the combination of economic growth and mergers and acquisitions. In this dynamic, the growth in the extraction and consumption of energy and materials continues. Resistance led by socio-ecological movements is not sufficient to stop it. However, growth is partially resisted by events stemming from shifted biophysical conditions.

During depth cycles, growth is low and human-nature relations are less destructive. While they may appear to observers as economic crises because of reduced market activity growth, dominant capital differentially accumulates by raising their prices and/or cutting their costs more than average, which helps with their central position in the power relations that make up society. Due to the social consequences of stagflation and cost-cutting (which affect workers income and buying power), social conflicts arise. Eventually, this reinforces breadth cycles.

ED IV: Asymptotes of power

There is increased systemic fear as a result of unpredictable socio-ecological conditions and difficulties in imposing additional power, i.e. the capitalist world tends to shift from a forward-looking to a backward-looking view when capitalising power. However, this process cannot result in the collapse of capitalism on its own. Dominant capitalists maintain control by using their power and influence to mitigate risks, but this does not result in systemic transformations.

ED V: Interconnected modes of degrowth transformation

Degrowth transformations are not spreading; they fluctuate at a low level. Therefore, they do not challenge capitalist practices and capitalisation in a significant way. Degrowth transformations remain low-key because of the capacity of sabotage deployed by dominant capital groups.

ED VI: Modes of sabotage of degrowth transformations

Hierarchical complexification, saturation of interstices, capture, and rupture are effectively deployed by dominant capital groups. Hierarchical complexification means that, to a wider and wider extent, social are subordinated to processes of capitalisation. This bolsters the saturation of the interstices. The circulation of material, meaning, and competence elements that make up social is increasingly monopolised by corporations. New elements that come to circulate in the context of transformations intertwine with capitalist ones and tend to be captured by capitalist. In other cases, when become increasingly established, the dominant capitalist coalitions have the firepower to disrupt them. These processes of sabotage prevent degrowth transformations from gaining traction and challenging the capitalist creorder.

The prominent dynamics of this scenario are shown in Figure 17 and Figure 18. An illustrative narrative is provided in Box 3.

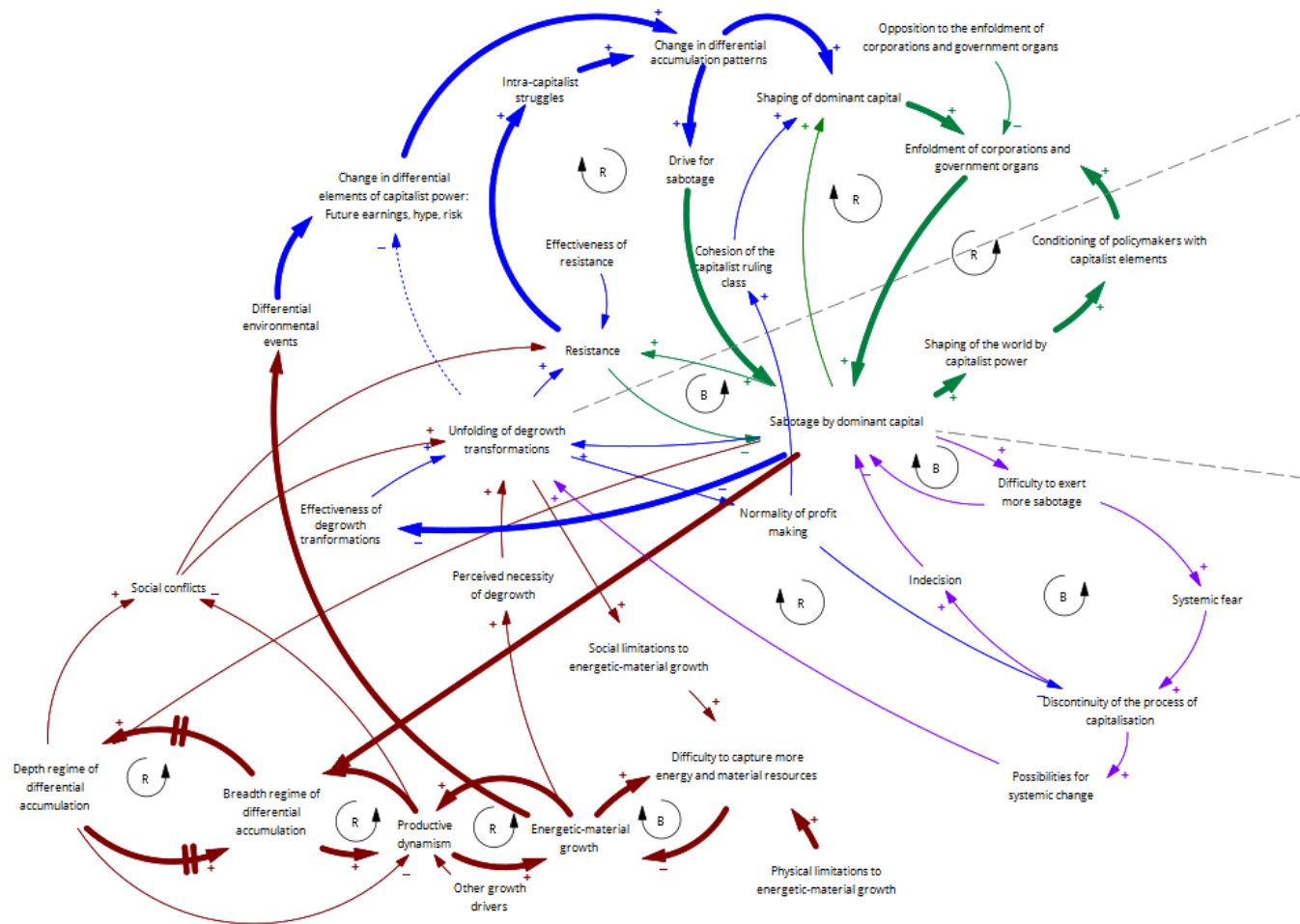


Figure 17. Scenario I: “Transformative efforts in the shadows of dominant capital” – Prominent dynamics in elements of dynamics I, II, III, and IV.

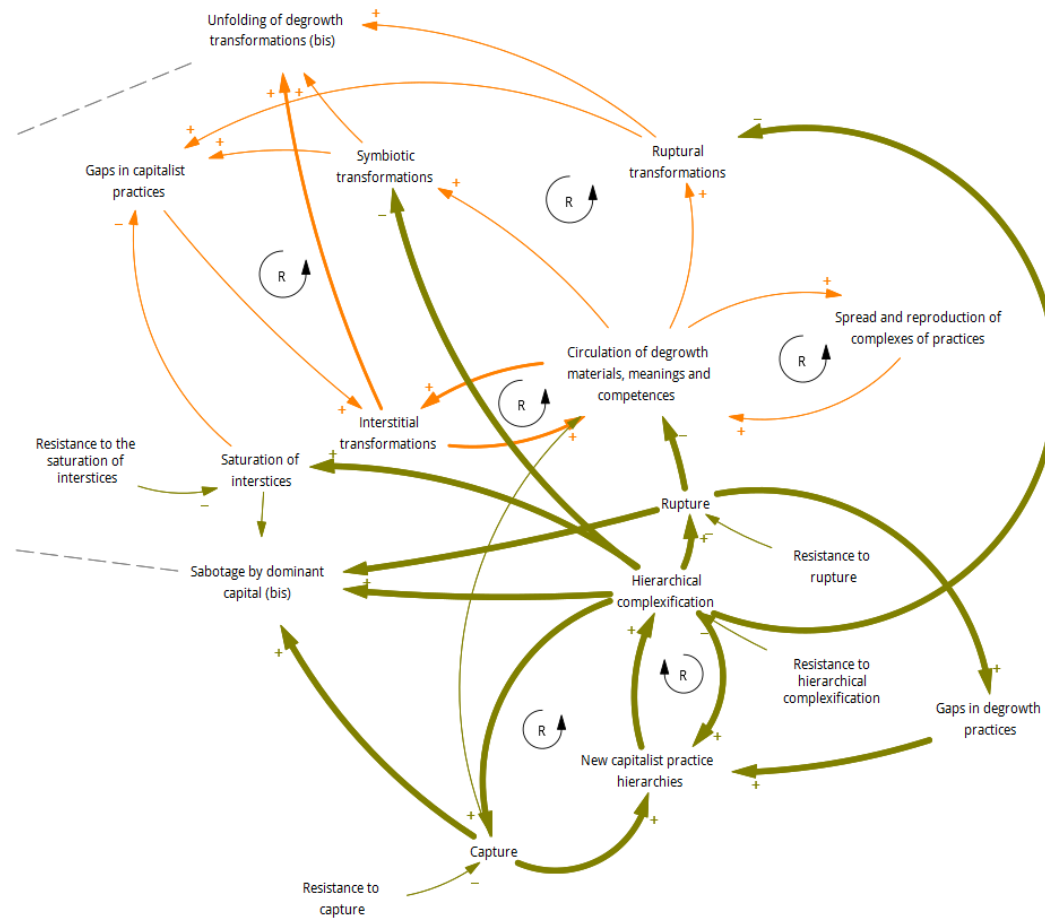


Figure 18. Scenario I: “Transformative efforts in the shadows of dominant capital” – Prominent dynamics in elements of dynamics V, and VI.

Box 3. Transformative efforts in the shadows of dominant capital

As I sipped my morning tea in 2035, the view from my flat provided a stark reflection of the world's power dynamics. Large corporations, with their sprawling headquarters, appeared to have a firm grip on the city. Their colossal towers representing energy behemoths, electronic industry titans, and vast food conglomerates, dwarfed the modest community hubs that dared to stand in their way.

Years ago, I joined a group of activists who advocated for degrowth. We struggled in a society that prioritised socio-ecological processes over the never-ending cycle of extraction and consumption. Despite this, our fervent calls were frequently drowned out by the might of extractive capitalism.

The way in which the food system was evolving was a visible manifestation of corporate dominance. Socio-ecological conditions were becoming increasingly volatile, which had generated interest in local agroecological systems. It had not prevented food behemoths of fortifying their positions. Their influence had penetrated deep into the corridors of power, creating an almost indistinguishable blend of corporate and governmental interests - alongside many of their counterparts in the electronic and energy sectors. This alliance appeared to be their defensive line against any significant opposition from socio-ecological activists.

Their imprint on the global scene was undeniable. Mergers and acquisitions were commonplace and even increased, resulting in an even tighter grip on material resources and the ability to decide. Despite the environmental toll and rising social unrest, their unwavering pursuit of profit continued. Even during productive downturns, they cleverly maintained profit margins by inflating prices or ruthlessly cutting costs, often at the expense of the common worker.

The consequences of this dominance can be found everywhere. Environmental degradation has accelerated, and societal tensions have reached critical levels. Nonetheless, these capitalist titans were able to deflect demands for systemic change by using their vast influence to mitigate risks and ensure the continued operation of their workforce.

In contrast, our efforts to promote degrowth have been plagued by setbacks. Every step we took was met with opposition – some of our friends had even been taken to court and imprisoned for their actions against harmful activities. The dominant capital groups appeared to have a stranglehold on society's fabric, guiding the movement of resources, thoughts, and skills. As we entered the 2040s, our initiatives were still often either co-opted, repurposed to fit their narrative, or completely ignored. However, our

efforts were often thwarted by the food conglomerates. They launched massive advertising campaigns promoting their products as healthy and sustainable. They lobbied against regulations that made local farming more competitive. They introduced "greenwashed" products, which were marketed as eco-friendly but were just as harmful to the environment. Local farmers, unable to compete with these conglomerates' low prices and monopolisation of mental and physical space, were increasingly adopting the corporate model. The variety of crops has decreased, as has the variety of our diets. Our food has become less nutritious and more processed. Obesity rates skyrocketed, and diet-related diseases became more common.

Despite this, I found comfort in working with new generation of activists. The road ahead would be difficult, but the desire for a more sustainable, just world remained alive and well. It was up to us to ensure that degrowth principles became the foundation of future societies, rather than just a passing fad. The coming years will be our trial period.

5.4.2 Scenario II: Dance between emerging degrowth practices and “greener” rulers

The second scenario depicts a future where degrowth takes root in the interstices of capitalist practices. In all areas of society, in every type of organisation, degrowth ideas are making headway and many experiments are taking place – from the unprecedented expansion of not-for-profit cooperatives to the convinced insiders who are pushing degrowth to the margins of institutions. However, dominant capital, as a group, continues to develop its hold on the socio-ecological world. Instead of being fundamentally challenged by the ideas and practices of degrowth that are circulating, certain capitalist groups and their allies in institutions are taking advantage of this movement to gain relative power within the capitalist world. As the pressure to achieve high standards in terms of sustainability intensifies, large companies are capturing interstitial practices, claiming “sustainable”, “ecological” or “green” practices and obtaining the support of public decision-makers to gain advantages. In addition, many environmental upheavals are upsetting the balance of power between the dominant capital groups, putting some at a disadvantage while strengthening the power of others. All of this contributes to a shift *within* dominant capital. In other words, the rulers become “greener” but their mode of power remains intact. This power dynamic fuel further resistance, which mostly unfolds in the form of interstitial transformations.

This scenario should be distinguished from what is commonly called “green capitalism” (Buller, 2022; R. Smith, 2016). It does not depict a *general* tendency of capitalist businesses to supposedly become “greener”. Instead, it emphasises capital accumulation as a differential process, where socio-ecological events fuel conflicts between capitalists.

ED I: Interplay between capitalisation and degrowth transformations

Even if many interstitial transformations mushroom, degrowth transformations lack the scale and influence to significantly affect the confidence of dominant capital as a whole, as reflected in their income flows, depending on future earnings, hype, risk, and the normal rate of return. However, as biophysical shifts escalate, differential accumulation patterns are affected. Dominant capital groups struggle to maintain or increase their differential power. While the ability of some groups to shape society is significantly affected by changes in biophysical conditions, others manage to benefit from them and see their differential capitalisation increase faster than average.

ED II: Capitalist power imposition and resistance

Dominant capital is shaped and reshaped through the ongoing intertwinement of leading corporations with governing bodies and other influential institutions (government organs). While the composition of dominant capital moves towards the control of more “green” activities (in response to differential environmental events), the nature of capitalist power remains unaltered. Dominant capital groups undertake sabotage, which is met with little resistance from non-capitalist forces. The assemblages of elements that make up the world are continually shaped by capitalist power. The actions of those in positions of power are conditioned by these elements. This strengthens the intertwinement of corporations and government organs. However, the imposition of power always prompts resistance...

ED III: Power-driven foundations of growth

Through both breadth and depth regimes of differential accumulation, dominant capital groups persist in attempting to control society (including human-nature relations). During breadth cycles, productive expansion and mergers and acquisitions increase the concentration of firm control. In this dynamic, the growth in the extraction and consumption of energy and materials continues, while those who control “green” activities (without presuming the reality of this assertion) perform better in terms of

differential accumulation and become more central. Similar to Scenario I, during depth cycles, perceived economic downturns allow dominant capital to increase profits by adjusting prices or cutting costs, leading to social conflicts that eventually drive breadth cycles.

ED IV: Asymptotes of power

Due to unpredictable socio-ecological conditions and difficulties in imposing further power, there is an increased systemic fear, i.e. periods in which the capitalist world tends to move from a forward-looking to a backward-looking view when capitalising power. However, this process cannot cause itself a collapse of capitalism. Dominant capital groups manage to maintain control, leveraging their power and influence to mitigate risks, and this does not lead to systemic transformations.

ED V: Interconnected modes of degrowth transformation

Degrowth transformations are mainly emerging as interstitial transformations, such as grassroots alternatives and within gaps of institutions. They rise in resonance with other, but less pronounced, processes of socio-ecological change – from more and more precise policy demands and direct confrontations with capitalist hierarchies. New meanings, materials, and competence in line with degrowth circulate at a higher and higher pace, bringing more and more individuals into degrowth practices. As they are captured and intertwined with capitalist hierarchies, elements of degrowth practices are being propelled and many of them become “mainstream”. However,, these interstitial transformations do not challenge the key power dynamics underlying differential accumulation upfront, and the capitalist mode of power is mostly untouched.

ED VI: Modes of sabotage of degrowth transformations

Hierarchical complexification, saturation of interstices, capture, and rupture are effectively deployed by dominant capital groups. Hierarchical complexification means that, to a wider and wider extent, social practices are subordinated to processes of capitalisation. This bolsters the saturation of the interstices. The circulation of material, meaning, and competence elements that make up social practices is increasingly monopolised by corporations. New elements that circulate in the context of transformations intertwine with capitalist ones and tend to be captured by capitalist In other cases, when degrowth practices become increasingly established, the dominant capitalist coalitions have the firepower to disrupt them. These processes of sabotage

prevent degrowth transformations from gaining traction and challenging capitalist hegemony. Simultaneously, sabotage fuels further resistance. While implementing institutional reforms seems out of reach, degrowth transformations mainly unfold in an interstitial way.

The prominent dynamics of this scenario are shown in Figure 19 and Figure 20. An illustrative narrative is provided in Box 4.

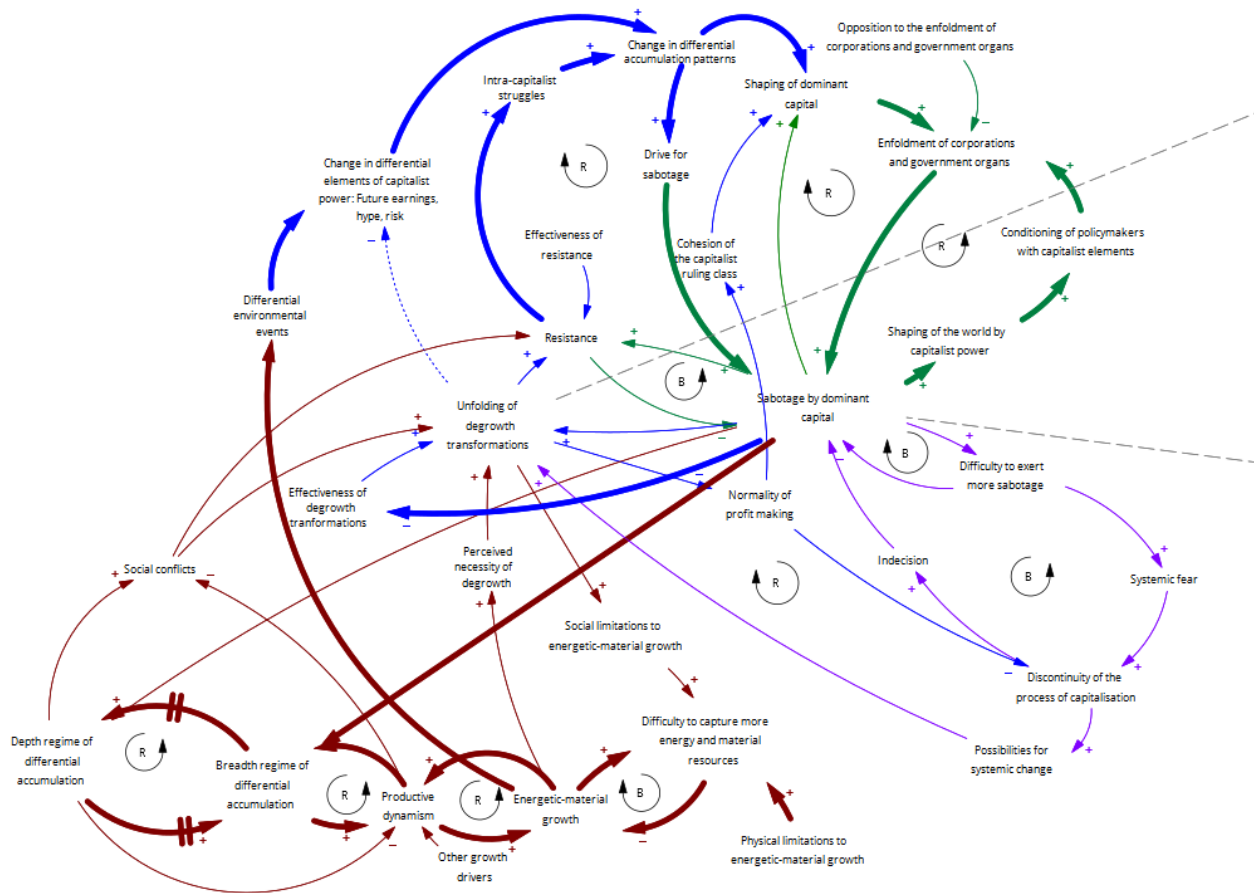


Figure 19. Scenario I: “Dance between emerging degrowth practices and “greener” rulers” – Prominent dynamics in elements of dynamics I, II, III, and IV.

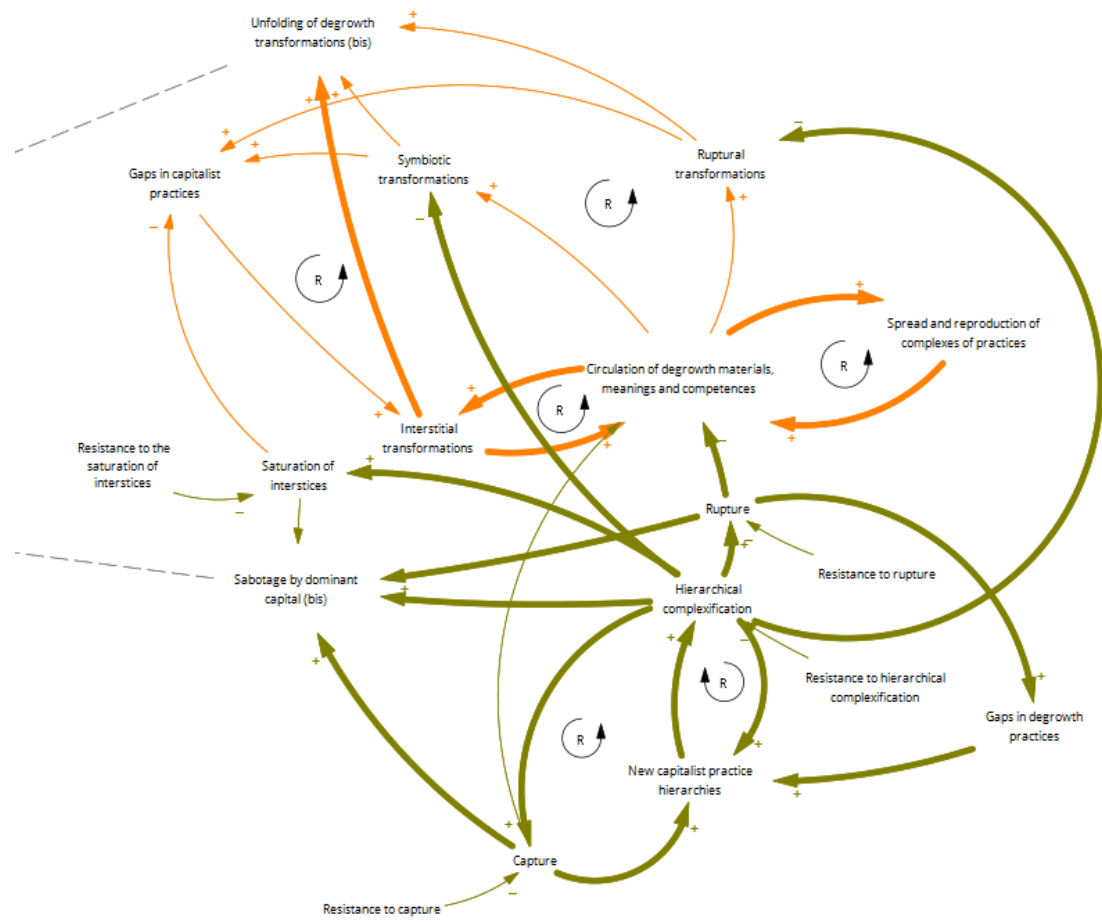


Figure 20. Scenario I: “The dance between emerging degrowth practices and “greener” rulers” – Prominent dynamics in elements of dynamics V, and VI.

Box 4. Dance between emerging degrowth practices and “greener” rulers

Some European towns in 2030: Farmers’ markets were more than just a place to buy and sell produce. A deeper story unfolded beneath the banners of organic produce and vegan options. It wasn’t just a matter of who was the greenest; it was also a matter of who could capitalise on being green the quickest and most effectively.

I’d seen the world’s environmental decline firsthand. As the ideology and practices of degrowth flourished, my friends and I established a network of networks for non-profit cooperatives, with the goal of providing degrowth-minded food solutions on a vast, polycentric scale. However, as we moved through this territory, we realised that in this evolving world, sustainability was less about ethics and more about differential accumulation.

Major food corporations strategically position themselves within the green mantra, not just adopting it. It was not enough to be sustainable in this new green economy. The real game was about out-greening competitors, not for the sake of the planet, to remain central in society in the face of the centrifugal forces of differential accumulation. Every environmentally friendly initiative was a calculated move to increase differential capitalisation and outpace the pack in the race for green dominance.

By 2035, the city’s food landscape was transformed into a strategic board. Powerful companies established green food “instant delivery” services as strategic assets – you could be delivered your favourite agroecologically-sourced meal in less than 15 minutes. Every environmental initiative was a move on this board, each one more calculated than the one before it.

Governments were intertwined with the most powerful players – this intertwinement was one of the very sources of their power. Policies and incentives that could have been tools for genuine change were now just assets in the corporate portfolio, given to those who could best leverage their green credentials for a competitive advantage.

But we were not just bystanders. We adapted after recognising the game. Building on the many local experiments of social security for food that succeeded or failed in the past, our proposal for making sustainable food accessible to all was stronger than ever. The support from a constellation of players, from alternative food initiatives to syndicates and other social movements was helping to propel the idea forward. We had convinced key political parties to try to take it to the next level.

In the 2040s, the stakes increased as environmental crises and a whole host of injustices worsened. Corporations that failed to effectively capitalise on their sustainable ventures found themselves falling behind. Others, who had strategically positioned themselves, saw these

upheavals as opportunities, widening the disparity even further.

The green landscape was starkly stratified by 2050. The social security for food had been implemented at the national level, but its scope was different than what its initial proponents expected. For example, whereas industrial beef meat was banned, the “green” synthetic meat, and vegetables grown from AI-driven “better than natural” ecosystems became financially accessible to everyone. This partly revealed who had won and who had lost in the differential accumulation game.

While the ideas behind degrowth were still alive, those who were their voice had to become more strategic, recognising that understanding the rules of the game was critical in a world where green was gold. We continued on our journey, our eyes wide open to the different plays going on in the green differential maze around us.

5.4.3 Scenario III: Navigating the tides of post-growth capitalism

The third scenario is a journey into a society in which the emphasis on growth is fading, driven by a growing critique of growth within society. No longer taboo, post-growth policies have rapidly become accepted. However, as the degrowth tenants make themselves hear, we are far from seeing the advent of a degrowth society. While the need to abandon growth is increasingly recognised and accepted, symbiotic transformations are captured. Dominant capital groups profit from it. The differential accumulation of capital continues for the dominant capital, which interweaves large companies and government bodies on the basis of stagflation and cost-cutting. This upward redistribution of power is accompanied by social conflicts and resistance in various forms – which triggers more imposition of capitalist power.

An important difference between CasP and conventional and Marxian economic approaches is that it considers that non-growth can be just as beneficial to the differential power of dominant groups as growth (Nitzan & Bichler, 2014), calling into question the idea of a quasi-mechanical imperative for growth (see Section 3.4.2.2). This scenario explores how dominant capitalists could seize on the exit from growth and take advantage of it.

ED I: Interplay between capitalisation and degrowth transformations

Degrowth transformations challenge the power of dominant capital groups, undermining the expectations of future earnings of dominant capitalists – according to the case, future earnings, risks, and hype. With their stance against profits, they question the very

principle of capitalisation, reflected in the normal rate of return. Dominant capital groups grapple with maintaining or amplifying their differential power. While some groups find their influence in shaping society significantly diminished due to these changes, others manage to exploit these shifts, accelerating their differential capitalisation beyond the norm. Further

ED II: Capitalist power imposition and resistance

Despite the unfolding of some transformations, the largest corporations and government organs remain closely intertwined, consolidating their dominance over society and human-nature relations. As dominant capital groups shift towards the control of “post-growth” businesses, the foundational nature of capitalist power remains steadfast. These dominant capital entities demonstrate an enhanced capacity for strategic sabotage, often encountering minimal resistance from non-capitalist forces. Consequently, the world continues to be moulded by capitalist agendas. Those in positions of the authority act within this paradigm, further solidifying the alliance between major corporations and governmental bodies.

ED III: Power-driven foundations of growth

Dynamics aligned with principles increasingly challenge the long-standing growth paradigm, resulting in noticeable erosion of society’s growth emphasis. Despite these challenges, dominant capital groups continue to adapt, primarily shifting their focus towards depth regimes of accumulation. Biophysical boundaries (Rockström et al., 2023), including those related to climate change, resource depletion, and ecological overshoots, further validate the importance of this shift. While markets experience sluggish or even negative growth, easing the pressure in terms of material-energetic use, dominant capital groups, thanks to their central position within the web of power relations, amplify their differential power through strategies such as aggressive cost-cutting and price increases. This depth-focussed approach exacerbates social inequalities and tensions, drawing criticism and resistance from various societal groups.

ED IV: Asymptotes of power

Capitalists may experience a period of systemic fear, but this is temporary and without consequences. When this backdrop emerges, dominant capitalists strive to adapt, leveraging their residual power to navigate the evolving landscape.

ED V: Interconnected modes of degrowth transformation

Interstitial, symbiotic, and ruptural transformations rooted in degrowth principles are on the rise, collectively mounting a challenge against entrenched capitalist power dynamics. These transformations, while distinct, create a web of intertwined practices, each amplifying the impact of the other. Their synergistic relationships serve as a potent force in propelling systemic change. Yet, many degrowth dynamics face sustained resistance from dominant capital entities, casting a shadow of uncertainty over potential outcomes.

ED VI: Modes of sabotage of degrowth transformations

Even as the call to move away from unchecked growth finds wider acceptance, it is swiftly co-opted within the very frameworks it challenges. Dominant capital groups, with their adept manoeuvrability have managed to profit from this shift in mindset. These entities systematically subordinate emerging social practices to traditional processes of capitalisation. This not only saturates available avenues for genuine change but also leads to a corporate monopoly over the materials, meanings, and competences integral to these practices. Any nascent elements championing degrowth transformations face the risk of being ensnared and diluted using capitalist power processes. When these transformative practices show promise and start gaining ground, they are met with strong disruptions from entrenched corporate-government coalitions.

The prominent dynamics of the “Navigating the tides of post-growth capitalism” scenario are shown in Figure 21 and Figure 22. An illustrative narrative is provided in Box 5.

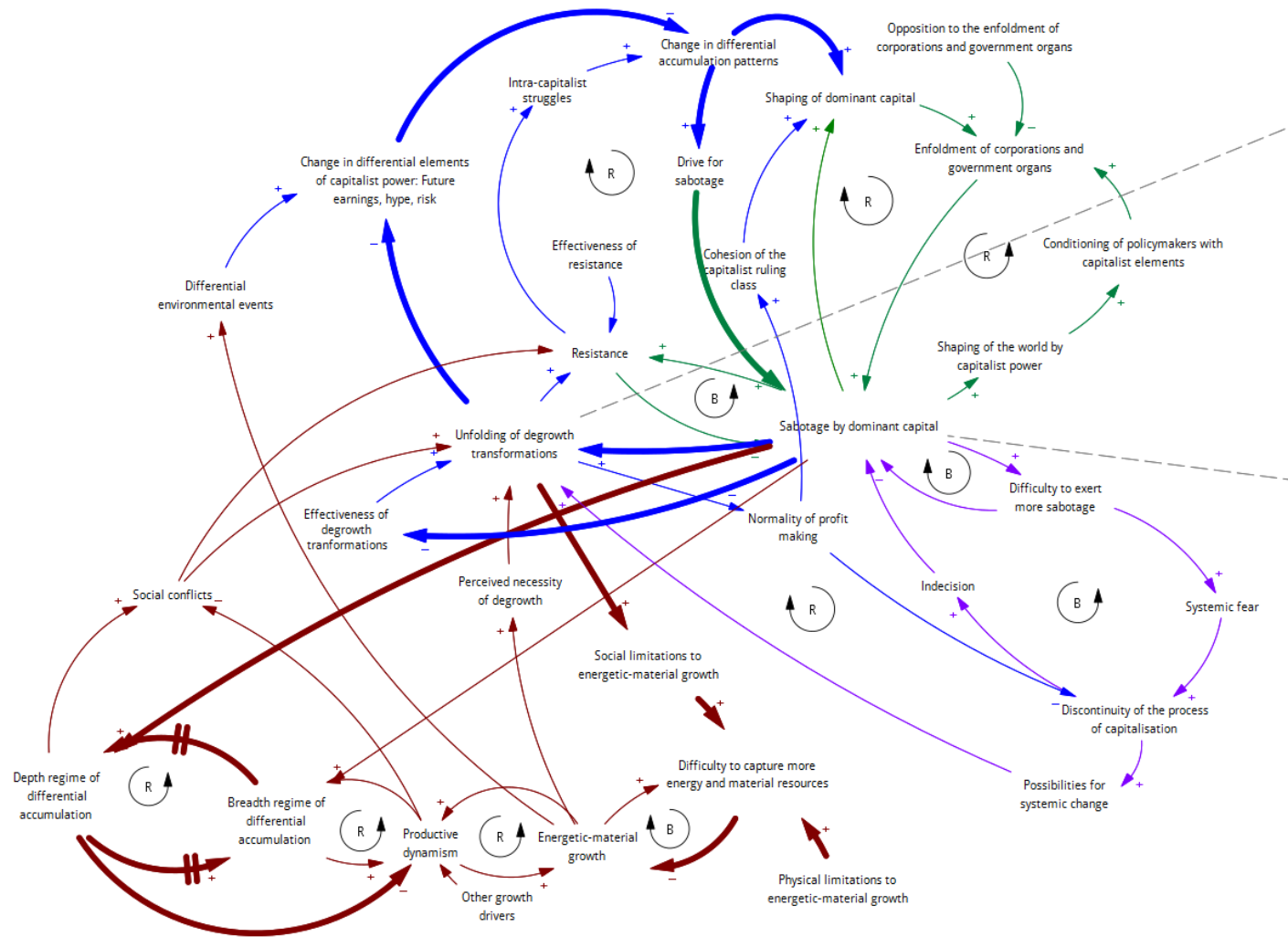


Figure 21. Scenario III: "Navigating the tides of post-growth capitalism" – Prominent dynamics in elements of dynamics I, II, III, and IV.

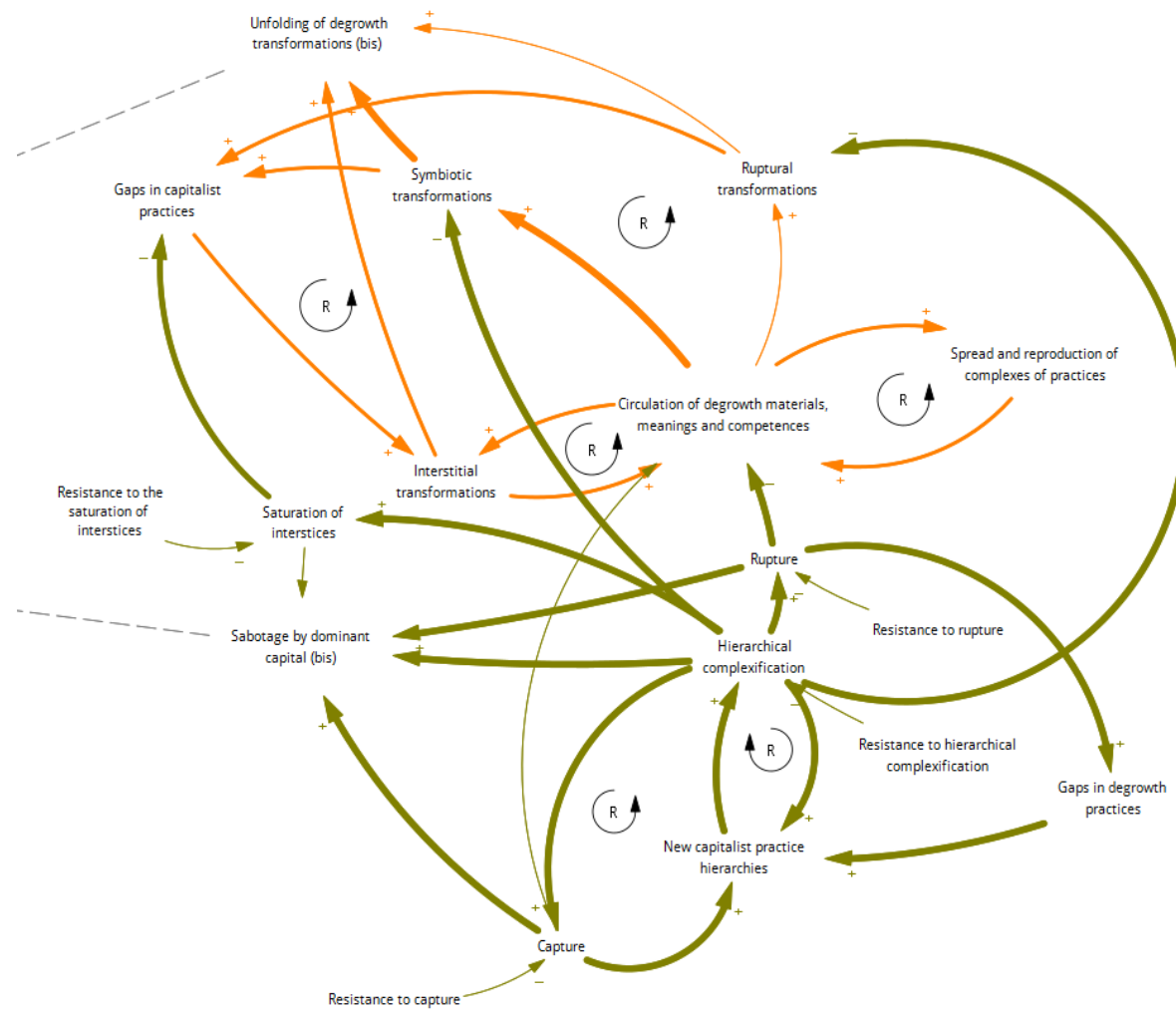


Figure 22. Scenario III: "Navigating the tides of post-growth capitalism" – Prominent dynamics in elements of dynamics V, and VI.

Box 5. Navigating the tides of post-growth capitalism

We just entered 2033. At 40, working as a strategic consultant in what was once the bustling heart of the business world, I sat in my glass-walled office. The city's skyline outside my window bore signs of stagnation, with half-finished skyscrapers that had halted construction years ago.

The relentless drive for growth seemed a distant memory. The conversation evolved from “growth at all costs” to “developing within limits”. Everywhere I turned, the term “post-growth capitalism” echoed. I reminisced about my university days when “degrowth” was a promising concept that challenged the norms of a consumption-driven society, techno-optimism, and the mirage of endless growth. Those were the days of marches, grassroots movements, fervent social media debates, and even academic courses centred on the idea.

However, as with many transformative ideals, the essence of degrowth was soon co-opted. These capitalist elites, previously critical of the degrowth narrative, now parade as its champions. They had cleverly branded themselves as the planet's saviours, launching products and services under the banner of “post-growth sustainability” – while the meanings of both “post-growth” and “sustainability” had significantly evolved. Post-growth economics institutes were generously funded by corporations to “help them” navigate the new post-growth reality.

No longer taboo, many post-growth policies were introduced at different political levels, aiming to limit the unchecked expansion of industries. The “Resource Cap Act” was established, which sets limits on the extraction of natural resources was one their prominent examples. However, as with many transformative ideals, the essence of degrowth was soon co-opted. For instance, large corporations exploited loopholes in the “Resource Cap Act”, buying out smaller companies to use their resource quotas.

Top positions had become expensive for capitalist groups. The intra-capitalist struggle was intense, and the ability to sabotage competitors and society was crucial. Economists talk endlessly on the radio about the never-ending “depth cycle”. Shop prices are going up, and at the same time, there have never been so many fired people. While the profits of the biggest companies soar, the social situation is getting worse and worse.

In 2039, in a bold move, a coalition of grassroots movements proposed an ambitious reform called the Sustainable Food Systems Act. The Act aimed to decentralise food production, promote local agroecological farming for all, and significantly reduce the power of agri-food monopolies. It was a vision of a food system that prioritised community health and ecological balance over profit. However, corporate giants, particularly those in the agri-food sector, launched a massive counter-campaign. They invested millions in lobbying, ran misleading advertising campaigns, threatened activists, and even took legal action to block the reform – a pure example of sabotage. The battle was fierce, and although the law underwent some changes, its

fundamental principles were watered down.

The close relationship between megacorporations and the government persisted. “Green” lobbying, “sustainable” mergers, and strategic alliances thrived, with both parties keen on preserving their intertwined power. Sabotage, albeit more refined, continued unabated. Grassroots initiatives that posed a threat were either assimilated or quashed.

By the 2040s, the repercussions of unchecked growth and the advancing climate crisis were undeniable. Rising sea levels threatened coastal cities, and resources became increasingly scarce. However, amidst these challenges, there was a noticeable slowdown. Economic growth rates either plateaued or turned negative. Yet, in this stagnation, major corporations found ways to thrive, manipulating prices and cutting costs, further widening social inequalities.

The societal divide deepened. I witnessed escalating social unrest. Protests, strikes, and public outcries became the norm. A palpable resistance against the capitalist juggernauts grew, and with it, a sense of systemic fear among the elites, as their once unshakeable dominance seemed increasingly fragile.

Come 2050, as I prepare for retirement and pack up my office, my thoughts drift to the future, awaiting my grandchildren. I harboured hopes that the ongoing struggle between genuine degrowth transformation and entrenched capitalist relations would eventually birth a society where sustainability was an ingrained ethos, not just a trendy catchphrase. The future remained uncertain, but hope endured.

5.4.4 Scenario IV: Holistic degrowth shift

Finally, I delve into a transformative narrative that envisages a future where degrowth transformations have successfully navigated the labyrinth of capitalist power dynamics to instigate widespread change. This scenario provides us with an optimistic yet essential exploration of the strategies, conditions, and events that could potentially move beyond the capitalist mode of power and steer society towards a degrowth paradigm. The imagined scenario starts with the emergence of socio-environmental factors that stimulate degrowth transformations. These changes, which are sporadic and initially subtle, gradually increase in speed and scope and cause a paradigm shift away from the imposition of capitalist power on society.

This scenario explores how the resistance and inhibition to degrowth transformations considered in the previous scenarios could be overcome. This holistic

scenario distinguishes it from more technical, economic, and policy-focussed assessments, as already found in the literature (see Chapter 2).

ED I: Interplay between capitalisation and degrowth transformations

Degrowth transformations gain momentum. Interstitial transformations, such as community food cooperatives and energy-sharing programmes, mushroom. Grassroots movements play a crucial role in this by establishing networks of sustainable, alternative practices in local communities all over the world. At the same time, they support and are being supported policy reforms, such as work-sharing schemes and the implementation of unconditional autonomy allowances (Liegey et al., 2013). In parallel, social movements shape and spread counter-hegemonic meanings. The idea that we need a paradigm shift beyond growth has become much more prevalent in society as a whole. At a time of intensifying socio-environmental crises, the pressure from this wave of changes causes imbalances within capitalist groups, which are reflected in differential accumulation patterns. They initially make an effort to resist, using various sabotage techniques to impede degrowth transformations. However, a strong front is formed by the cooperative interaction of grassroots alternatives, institutional reforms, and oppositional activism that successfully thwarts sabotage attempts. A surge in support for the idea of is combined with interstitial practices filling the gaps of capitalist practices, direct confrontations with the most influential dominant capital groups, and new alliances with other movements. For capitalists, this eruption is surprising, the capitalist world is destabilised. This kind of destabilisation does not last but is becoming more frequent. Eventually, dominant capital as a whole enters de-accumulation.

ED II: Capitalist power imposition and resistance

Degrowth transformations develop new strategies and ways of scrutinising power dynamics. The intertwinement between leading corporations and government entities is at first timid but is then strongly opposed. The power of key corporations, which are closely linked to government organs, begins to wane.

Taking advantage of this opportunity, degrowth proponents quicken the adoption of these changes intended to challenge current capitalist power dynamics. When dominant capitalist groups are challenged by symbiotic practices, they gain strength, and when ruptural changes occur, new practices emerge. As a result of this upsurge in

transformative energy, previously marginal practices have become the norm, resulting in transformative socio-ecological change.

ED III: Power-driven foundations of growth

While at first, material-energetic growth seemed unstoppable, the explosive assemblage of degrowth transformations led to the implementation of socially just policies limiting collective energy and material footprints. Powerful capitalists find their ability to tap into energy resources and implement cost-cutting measures curbed by degrowth transformations. Similarly, their strategies of stagflation and mergers and acquisitions falter, leading to a period of differential de-accumulation

ED IV: Asymptotes of power

As societal obedience begins to wane and their confidence in the long-term efficacy of differential accumulation dwindles in the midst of this upheaval, leading corporate-government coalitions must contend with growing systemic fear. As degrowth transformations gain traction, dominant capital groups encounter escalating resistance, making it more challenging for them to further extend their power through traditional means of sabotage. This shift creates pervasive systemic fear among these dominant entities. Their once-confident forward-looking strategies and projections become increasingly uncertain. This uncertainty, combined with their diminishing ability to effectively engage in sabotage, threatens their established influence. This escalating unpredictability hinders investments and weakens their capacity to impose their power on society. Capitalists' faith in capitalisation dwindles as societal obedience wavers. Degrowth transformation tame and dismantle weakened modes of sabotage because dominant capital groups are indecisive.

ED V: Interconnected modes of degrowth transformation

Degrowth transformations in all spheres of society drive deep and broad systemic change. Symbiotic and ruptural transformations gain momentum, whereas interstitial transformations make once marginal practices widespread. Institutional reforms are being implemented in parallel with this grassroots activity to transform governance modes. Central to these reforms is a transformation of the welfare state, shifting from a system designed primarily to facilitate economic growth to one that prioritises social well-being, ecological sustainability, and equitable distribution of resources. A supportive framework

for degrowth transformations is provided by policies such as universal basic income, public provision of essential services, and ecological taxation.

ED VI: Modes of sabotage of degrowth transformations

Strategies to impede degrowth transformations are effectively opposed and lose their effectiveness. Hierarchical complexification, saturation of interstices, and capture become less prevalent, whereas rupture processes are less successful. This transformation leads to the progressive emergence of a degrowth society. The disrupted capitalist hierarchies of practices leave room for new materials, meanings, and competences in line with degrowth principles, organically developing a degrowth society from within. The very foundations of the capitalist mode of power are disrupted by powerful blows to finance and capitalisation . In this new reality, institutions transform significantly, promoting global ecological justice, wellbeing and growth independence from hierarchy and power.

The prominent dynamics of the “holistic degrowth shift” scenario are shown in Figure 23 and Figure 24. An illustrative narrative is provided in Box 6.

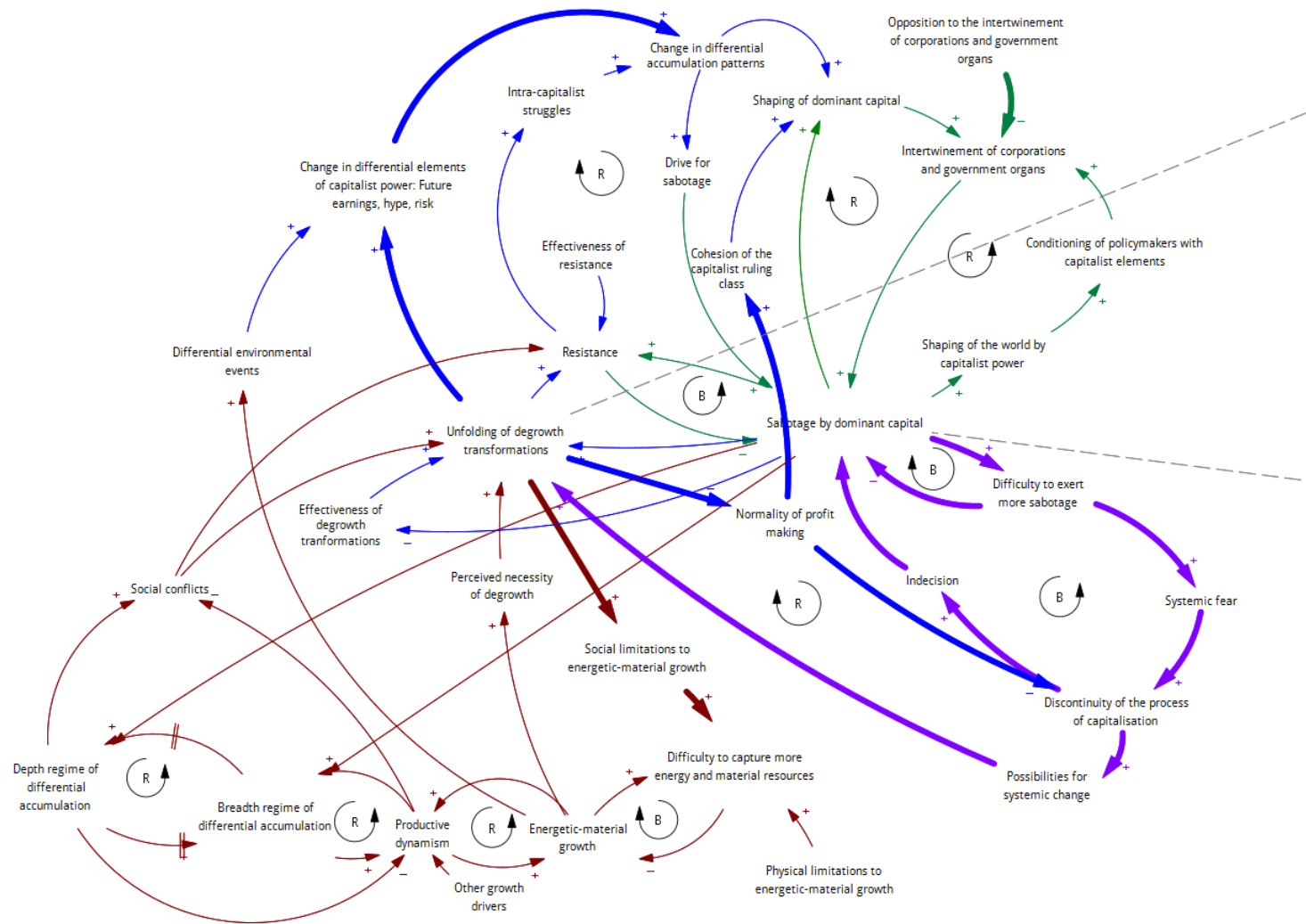


Figure 23. Scenario IV: “Holistic degrowth shift” – Prominent dynamics in elements of dynamics I, II, III, and IV.

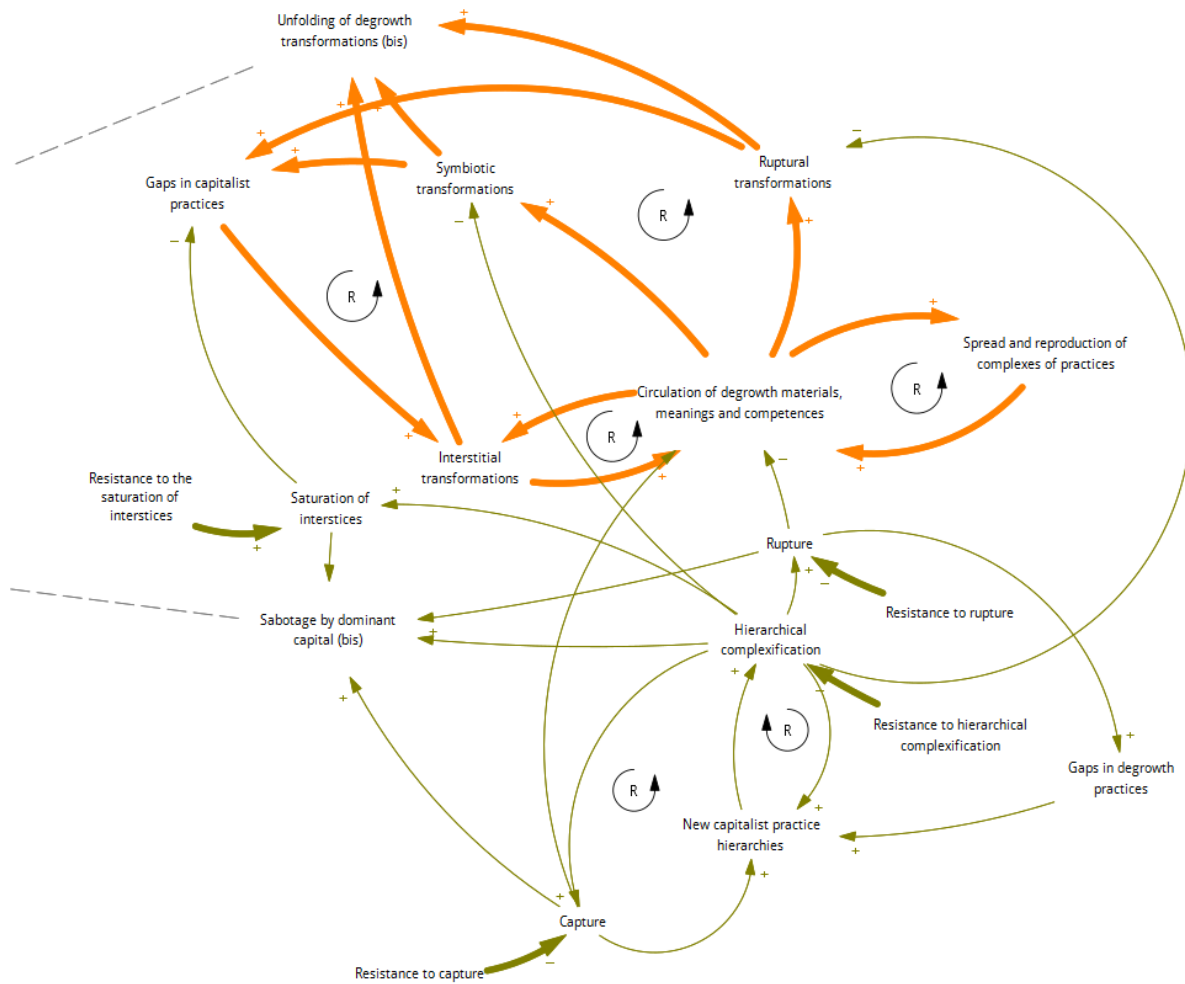


Figure 24. Scenario IV: “Holistic degrowth shift” – Prominent dynamics in elements of dynamics V, and VI.

Box 6. Holistic degrowth shift

It was 2036. From my little patio, I could see a city that had changed dramatically, though not uniformly. The skyline, once a symbol of corporate ambition, now combines community allotments, urban farms, and local food markets with remnants of the past. Hand-painted signs and murals advertised upcoming community harvests, food-sharing events, and sustainable agriculture workshops, while digital billboards promoted the latest corporate “eco-friendly” products.

Our society’s narrative had shifted. “Degrowth” had risen from obscurity to become guiding principle for many. However, its acceptance was uneven. While some genuinely embraced its ethos, others appropriated it as a trendy label, thereby removing its depth. I recalled the early days when I advocated for alternative food systems alongside a group of committed individuals. We faced scepticism, logistical challenges, and the intimidating presence of industrial agriculture behemoths.

Sensing a shift in the tide, major corporations attempted to integrate themselves into the “sustainable food” movement. They launched “authentically green” product labels and associated with local initiatives. Despite these obstacles, environmental activists oriented their efforts towards the most powerful players and have thwarted some of their strategies. Instead of seeing corporations as mere leaders of our economy, corporate-government alliances and the way they prevent socio-ecological change were increasingly exposed.

Benefiting from the widespread dissemination of degrowth ideas and practices in society, transformative policies have begun to emerge. Governments recognised the shortcomings of GDP as a sole indicator of well-being, instead emphasising health, education and overall life satisfaction. Many alternative indicators had been implemented and prominently used by governments at different levels.

As the decade progressed, a palpable tension emerged. The once-dominant capitalist coalitions, sensing their waning influence, grappled with growing systemic fear. Their forward-looking strategies became increasingly uncertain. Investment decisions are paralysed by unpredictability, while the normality of profits was deeply shaken. Their attempts to sabotage grassroots movements, once executed with precision, became clumsy and ineffective. The once-mighty corporations faced with a society that was increasingly disobedient to their whims, found themselves at crossroads. Being indecisive in the directions to take, their grip on society loosens. This reflected a real change in society, progressing in a non-linear fashion, which had not been anticipated before.

As a result, by the 2040s, new laws imposed breaking up conglomerates. Some newly built government agencies to steer the degrowth shift with diverse players within society

were much more immuned to corporate influence.

The saboteurs of socio-ecological change had lost influence. As degrowth practices and ideas continued to mushroom in the ruins of collapsing dominant capital, proposals for the degrowth shift were supported by wide popular coalitions and many have been adopted. A universal basic income provided everyone with a financial safety net, while a green job guarantee ensured that no one was left behind as we transitioned away from environmentally damaging industries. The working week was reduced, giving people more time to devote to their private life, including the development of more local communities, weaving the threads of a more cohesive, democratic society and reducing its environmental footprints.

Capitalist power became much more diffuse and more easily containable. However, the consequences of previous excesses were clearly visible. Climate change, soil degradation, water scarcity, and biodiversity loss were still major concerns. The shadow of capitalist groups, however, loomed, at times adapting to, but frequently clashing with the new society's dominant practices.

I pondered our trajectory as 2050 approached and mentored the next generation of environmental activists. Society was constantly changing, with some pockets resisting change and others enthusiastically welcoming it. The journey was still ongoing, but each step was a step closer to more peaceful coexistence with our planet. Our actions not only reshaped our relations between humans and nature, but they also improved our collective well-being. The challenge was to keep transformations going in our ever-changing society.

5.5 Discussion and conclusion

This chapter explored possible scenarios that portray novel outcomes of the interplay between degrowth transformations and capitalist power, acknowledging the inherent limitations of these depictions. These pathways offer spaces of reflection on possible developments from a future marked by the power dynamics of capital accumulation inhibiting the inception of a more egalitarian, post-capitalist society. The scenarios within this chapter provide a more holistic perspective on the possibilities and difficulties of change against the process of capital accumulation.

5.5.1 Novel scenarios

Each of the four scenarios grapples with the balance between degrowth transformations and the imposition of capitalist power, yielding diverse outcomes. It offers a unique lens

through which to view the interplay between degrowth transformations and capitalist power dynamics:

- In the “**Transformative efforts in the shadows of dominant capital**” scenario, powerful capital groups, particularly in extractive industries, impede degrowth transformations. These organisations’ close ties to governing bodies ensure their continued growth and influence. Despite uncertainties in socioecological conditions, they prevent capitalism’s collapse through strategic sabotage. Because of the sabotage strategies of the dominant capital, it is difficult for degrowth transformations to gain traction. This scenario highlights the assembly of the dynamics conceptualised in Chapters 3 and 4. It underscores the challenges for degrowth transformations posed by dominant capital groups, especially those related to extractive industries, and their influence on governing bodies.
- “**Dance between emerging degrowth practices and ‘greener’ rulers**” scenario sees degrowth practices expanding across society, but dominant capital groups co-opt the “green” trend for their benefit. While environmental challenges disrupt power dynamics, the essence of capitalism remains. This scenario does not depict a general shift toward “green capitalism”. Instead, it emphasises capital accumulation as a differential process, where degrowth transformations and socio-ecological events may fuel conflicts among capitalists and shifts in differential power.
- The “**Navigating the tides of post-growth capitalism**” scenario depicts a society shifting its emphasis away from growth. However, dominant capital groups adapt and continue to amass power, causing social conflicts. A significant distinction between CasP and conventional and Marxian economic approaches is the understanding that zero or negative growth can be just as beneficial to the power of dominant groups as growth and is not necessarily identified as a crisis for capital accumulation (see Sections 2.3 and 3.4.1). This scenario delves into how dominant capitalist groups might leverage “post-growth” policies to their advantage.
- Last but not least, the “**Holistic degrowth shift**” scenario envisions a degrowth-embracing society that challenges and transforms capitalist power structures. Convergent grassroots movements, policy reforms, and ideologies erode capitalist dominance and usher in a society that places ecological justice and well-being at

the forefront. This scenario offers a holistic perspective, setting itself apart from the more technical, economic, and policy-focussed evaluations found in the existing literature (see Chapter 2).

The pathways presented in this research do not aspire to predict or represent any truth; rather, they aim to elucidate potential dynamics. Their plausibility rests on the relevance of the system dynamics assumptions, validity of the underlying hypotheses, and coherence of the identified relationships. Thus, these scenarios provide a “snapshot” of ongoing reflections on the possibilities for degrowth emerging from within capitalism.

Rather than focussing on capitalism *as a whole*, these scenarios consider the processes in which transformations challenge the power of *dominant capital*. To do this effectively, it is imperative to understand who holds and exert power, how it is maintained, and how it can be contested. While the forces arguing for change in the direction of form a diverse mosaic (Schmelzer et al., 2022), the main resistance to change is dominant capital. The scenarios also draw attention to differential accumulation dynamics. There is a risk that degrowth-related transformations and socio-ecological changes will be co-opted by certain capitalist groups to strengthen their relative power. This highlights the need to ensure that efforts to promote do not inadvertently strengthen the power of those who might exploit these changes for their own benefit.

Finally, strategic sabotage is not considered an anomaly but a systemic impediment to the transition. These dynamics are not simple “lock-ins” that can be “unlocked”. They demand a nuanced understanding of the conflicts inherent in transformative processes. Consequently, it is crucial to address differential power processes when envisioning transition trajectories. This underscores the importance of recognising the interconnectedness of economic and political factors, transcending traditional studies solely focussed on economic analysis. The pivotal question for any theory of change is how degrowth can strive for less hierarchy, resist appropriation, maintain awareness of rupture, and overcome the saturation of interstices in the face of sabotage.

5.5.2 Methodological considerations

One core limitation of these scenarios is that they are the product of my mind alone. This scenario exercise did not, indeed, incorporate stakeholder engagement in the crafting of scenarios – whereas this type of participation is more common in futures studies (Poli,

2019). This was, however, choice originating from the nature and objectives of my work. This chapter's primary aim is to explicate the elements of dynamics, exploring the relations between transformations and capital accumulation. In this context, the scenarios are designed to *illustrate* the implications of the theory, rather than to guide practical decision-making processes or accommodate a variety of perspectives. In other words, while focussing on theoretical implications, it might not capture the nuances and complexities required for practical applications.

5.5.3 Concluding remarks

As we stand on the precipice of an uncertain future, this chapter endeavours to illuminate potential paths arising from the dynamic interplay between degrowth and capital accumulation processes. Each of the four scenarios offers a unique depiction of how this confrontation could potentially unfold, ranging from the continuation of capitalist dominance to a substantial shift towards a post-growth society. In crafting these scenarios, I intended to provide a tangible perspective on the potential unfolding of transformations among the process of capital accumulation. Their primary purpose is to provide insights into the constituent dynamics of a theory of change. These scenarios underscore the complexities of the challenges and opportunities that may lie ahead, emphasising the importance of understanding the power dynamics in the context of degrowth transformations. They illustrate the potential conflicts between degrowth dynamics and capitalism, serving not as specific predictions, but as tools for visualisation and catalysts for critical thinking and discussions about the processes of change.

The main body of this thesis concludes with the explorations and insights provided in this chapter, setting the stage for the final chapter. Here, I will reflect upon this journey, highlighting the key findings, contributions, and potential areas for future study.

6 Conclusion

“What needs to be activated today is a line of thought that commits to a possible alternative, which is itself under the banner of fighting against adherence to the probable, against any interpretation that would subscribe to the irresistible nature of capitalist frenzy as if it were our destiny, or even the favoured vector of progress and emancipation.”

— Didier Debaise and Isabelle Stengers (2016, pp. 87–88; mt)

6.1 Introduction

Despite increasing awareness of current and future socio-environmental issues and the proliferation of proposals, initiatives, movements, and action plans, a transformation process that is commensurate with socio-environmental crises is still lacking. My early exploratory research, centred around cooperatives and sustainable food systems, revealed the tension between socio-ecological values and the difficulties faced when attempting to implement them in a capitalist society (Vastenaekels & Pelenc, 2020; see Box 1, p. 179). The enthusiasm generated by these grassroots initiatives often seemed in stark contrast to the marginalisation they faced, sparking my interest in the power dynamics shaping our capitalist societies.

Although a minority and not in all parts of society, many among Western capitalist societies are enthusiastic about alternative socio-ecological solutions, including degrowth, which advocates for a democratically planned downscaling of production and consumption and a slowdown of society in the name of ecological sustainability, social justice, and well-being. However, it is unclear how such a radical transformation, fundamentally at odds with capitalist dynamics, can unfold in Western, modern capitalist contexts. While some destabilising events, such as the beginning of the COVID-19 pandemic, may have suggested the possibility of starting anew, recreating a new society from a blank slate is not realistic. Instead, it should be acknowledged that the becoming of a post-growth society must start from within capitalism.

While capital accumulation, its core process, raises challenges for socio-ecological change in line with degrowth principles, a theory of change is necessary to shed light on the possibilities for the unfolding of degrowth transformations. This thesis contributes to laying the groundwork for such a theory, building upon my initial findings on the role of grassroots initiatives and their potential to challenge capitalist principles. The following analysis delved into the processes of capital accumulation and its interplay with degrowth transformations, aiming to propose a comprehensive understanding of the challenges and opportunities ahead.

The research process is an ongoing undertaking, and as such, it is challenging to arrive at a definitive conclusion. However, this final chapter provides a synthesis of the findings and discusses their implications. Building upon the insights from the previous chapters, this study identifies key limitations of this research and suggests avenues for further exploration. It ends with final reflections on the process.

6.2 Synthesis of the findings and contributions

6.2.1 Aims

“Of the many unasked questions, the most burning concern the institution of capital. The sad fact is that, these days, most of those who write on social affairs – global or local – know little about capital accumulation and care even less. And those who do deal with accumulation – namely the economists, including many Marxists – often use antiquated categories and theories that no longer fit present-day realities.”

— Jonathan Nitzan and Shimshon Bichler (2006, p. 2)

This thesis proposes elements of dynamics to assemble a theory of change for investigating *how degrowth transformations can unfold against the process of capital accumulation*. To address this question in a holistic and comprehensive manner, it is necessary to move beyond the self-referentiality of economic thinking embodied in the concepts of capital from both capital as productive goods and Marxian perspectives. Through assembling insights from the theory of capital as power (CasP) and Social Practice Theory (SPT), this thesis concludes that degrowth transformations must navigate

a range of *modes of sabotage* undertaken by dominant capital groups, which directly and indirectly inhibit multiple facets of socio-ecological transformations aligned with the idea of degrowth. By identifying these processes, it becomes possible to imagine possible future pathways and reflect on how a post-growth society can emerge from within capitalism.

This theorisation exercise produces emerging patterns that can be synthesised at three main levels:

1. The first level concerns theoretical perspectives. Drawing on degrowth's critique of economism and Serge Latouche's idea of "escaping the economy", this thesis critiques the use of dominant approaches to capital accumulation and proposes a novel assemblage of theoretical approaches, more holistic and power-centred, to examine the unfolding of degrowth transformations starting from within capitalism.
2. The second level involves putting these theories into dialogue with degrowth to bring out six elements of dynamics for a theory of change.
3. Finally, the third level involves connecting these elements of dynamics into a single conceptual model, which can lead to different outcomes, and better understanding these by drawing on them to imagine multiple degrowth pathways in the face of capital accumulation.

6.2.2 Comprehensive understanding of capital accumulation in the context of degrowth

Whereas degrowth contests the assumptions that legitimise economic rationality as the ultimate and inevitable form of being in the world (Fournier, 2008; Latouche, 2009a, 2012; Leff, 2021), the concepts of capital used in the degrowth literature paradoxically hinder its capacity to fully politicise our understanding of the intertwinement between capital accumulation and degrowth transformations. By considering an analytically distinct economic sphere, in different ways and to different extents, both capital as productive goods and the Marxian concept of capital involve thinking that wide-ranging forms of power and politics are external to accumulation (see Section 2.4). However, neither degrowth nor capitalist processes are ever solely *economic* or *political* (Ariès, 2005; Fournier, 2008; Kallis, 2018; Latouche, 2009a; Nitzan & Bichler, 2000a). By viewing the economy as a relatively coherent, self-referential sphere, the use of

“economic” solutions becomes self-evident. In contrast, the profound interconnectedness of so-called economic processes with other dynamics, including manifold power processes – is overlooked in our understanding of change.

However, in the absence of a proper understanding of capitalism, one cannot properly assess how degrowth transformations are inhibited by capitalist dynamics and how they can emerge from within capitalism. In other words, it limits our ability to think about the conditions under which degrowth transformations can unfold from within capitalism. This thesis is thus an invitation to take the escape of the economy seriously, which I try to put directly into practice myself, with theoretical and epistemo-ontological coherence (see Section 1.4.1). I believe that degrowth research should arm itself with consistent theoretical lenses to contribute to degrowth’s objectives. In that context, this thesis proposes a combination of theoretical approaches to develop elements of dynamics for a power-centred theory of change for degrowth.

Degrowth scholarship has lacked engagement with CasP (Nitzan & Bichler, 2009; shortened to "CasP"). This approach enables exploring of the implications of capital accumulation – and in particular, the role played by dominant groups – in the context of degrowth transformations beyond the economic-political divide. From a CasP perspective, capital is not a productive entity used by firms compelled by the rules of the supposedly objective realm of production. Profits do not solely come from labour exploitation or the laws of supply and demand and firms. Capital accumulation is not viewed as shaped *from the outside* by government interventions or supported by a superstructure derived, conditioned, or ultimately determined by economic conditions. Capital is not external to power, it *is* power. More precisely, capital is an ongoing symbolic representation of power through a continual valuation process called capitalisation. It is not the power to produce but the power to prevent, restrict, and potentially inhibit any process that makes up society (including degrowth transformations) to generate profits by any means and this against resistance. In this context, capitalism is not viewed as a mode of production or an economic system but mode of power. From this perspective, the main signature of capitalism is not production, innovation, and progress but rather hierarchisation, control, and sabotage of society’s creativity and wellbeing. This has far-reaching consequences for the unfolding of degrowth pathways, as capital accumulation is thus not the “engine” of economic growth,

but an encompassing power process that impedes the very possibility of undertaking a socio-ecological transition.

In this process, dominant capital groups – the largest corporations and their relations with government organs – have a significant level of agency and attempt to *differentially* accumulate power – i.e. faster than their counterparts – while necessarily facing opposition processes (of any kind, including environmental ones; see Section 3.3). Since capitalisation quantitatively reflects the expected influence of any process on future profits, capitalist power shapes and is being shaped by cultural change, law making, environmental shifts, wars and any other socio-ecological process, including degrowth transformations. Through their intertwinement, leading corporations and key government organs undertake what Nitzan and Bichler call (after Veblen) *strategic sabotage* – the implications of which for degrowth are explored in this research (see Element of dynamics III, Section 3.3.6).

Because the sabotage undertaken by dominant capital groups cannot be reduced to *economic* actions – which would be a form of economism, incompatible with degrowth – SPT is useful to consider the interconnectedness of social processes beyond traditional divides in the investigation of how degrowth transformations are inhibited by dominant capital groups. It has helped in the proposition of a typology of modes of sabotage that hinder degrowth modes of transformations – interstitial, symbiotic, and ruptural transformations, following Wright (2010). From an SPT perspective, social actions are not solely reflections of individuals' ideals, meanings, or attitudes but rather expressions of social and cultural customs, common ways of responding in certain situations, using material objects at hand, and socially acquired skills and habits. This framework offers the opportunity to move beyond the self-referentiality of the economic sphere by acknowledging that so-called economic practices are fully part of the complexity of socio-ecological life (Jaeggi, 2018).

This previously unexplored combination of perspectives contributes to the advancement of degrowth research and ecological economics by offering novel insights into capitalism, and the power processes that are part of degrowth transformations. Indeed, degrowth thinking and ecological economics more widely lack, so far, an engagement with the theory of CasP, which is characterised by being open to the point of view and agency of powerful capitalist coalitions to better comprehend how they dominate. The explicit focus on power relations is a blind spot for ecological economics

identified by Gale (1998) 25 years ago, which has not improved much since. The power of capitalists in their dimensions and how they oppose also still lack crucial investigations in degrowth scholarship (Hickel et al., 2022). For example, except for broad definitions of democracy, this consideration is seldom included in degrowth “principles”. Among Latouche’s (2009a) eight “R”s, Flipo’s (2007) five and Demaria et al.’s (2013) six “sources of degrowth”, Lievens’s (2015) “map”, Kallis’ (2018) “nine principles”, Parrique’s (2019) fifteen principles, and Abraham’s (2019) three principles, only the latter centrally points out the problem of firms, rather than criticising their tendency to commodify – which is correct, but misses the point that powerful capitalist coalitions inhibit the possibilities of multifold degrowth transformations. In light of the outcomes of this research, I suggest including the principle of *degrowing hierarchies* as a key dimension for degrowth transformations.

Indeed, while the concept of degrowth mainly focusses on production and consumption, the perspective developed in this research invites us to consider these processes as the consequence of the mesh of wide-ranging power relations shaped and reshaped by the process of differential accumulation – which takes place largely beyond “the economy”. It becomes possible to develop ideas about how these power relations undermine the possibilities for transformations. Overall, this combination of perspectives allows for the elaboration of missing elements of dynamics for the unfolding of transformations.

Contribution 1

This thesis problematised the concepts of capital used in the degrowth literature. By dividing economics and politics, the ways in which degrowth transformations can unfold against the process of capital accumulation remain anchored in a social imaginary colonised by the economic, while thinking includes a critique of the role given to the economy as a worldview and set of practices.

Contribution 2

This research has proposed a holistic and power-centred perspective to understand capital accumulation. This sets the stage for a comprehensive exploration of how degrowth transformations, considered beyond their so-called “economic dimensions” as multifaceted processes of socio-ecological change, can unfold against capital accumulation, conceptualised as a broad power process.

6.2.3 Elements of dynamics for the theory of change

This thesis explores the dynamic interaction between the principles of degrowth and the process of capital accumulation, presenting a critical analysis of the potential transformations that could arise from this interplay. This analysis is organised around six key elements of dynamics, each addressing a significant aspect of the interaction between degrowth and dominant capital. Each element of the dynamics is encapsulated as a causal loop diagram (CLD), which allows the related dynamics to be described clearly (see Section 1.4.4.4). These elements of dynamics encompass differential accumulation processes, capitalist power imposition, power-driven foundations of growth, asymptotes of power, interconnected modes of transformation, and modes of sabotage of degrowth transformations. This exploration aims to unravel the complexity of the relationship between and capitalism, uncovering potential paths of socio-ecological transformation:

1. **Element of dynamics I** (Interplay between capital and degrowth transformations)
 - Acknowledging the inherent link between degrowth transformations and differential accumulation processes can shed light on how changes associated with degrowth can alter capitalist power. This element shows that degrowth transformations may influence differential accumulation patterns by reshaping capitalists' expectations about the future, specifically future earnings, hype, risk, and the normal rate of return. In parallel, this element of dynamics might encourage those who study degrowth transformations to investigate what processes affect specific capitalisation levels. This could then involve developing strategies to disrupt differential accumulation processes and by extension, the power relations they reflect.
2. **Element of dynamics II** (Imposition of capitalist power and resistance) – From the CasP perspective, understanding the dynamics of capitalism requires examining the agency of capitalists in coalition rather than isolated owners. Significant coalitions are typically formed as corporations, which are key to differential accumulation, as they have the agentic capacity to control strategic aspects of society together. Profit generation in capitalism is not only driven by innovation and production but also by social and legal institutions, including those that prevent, restrict, exclude, or disable – which is called *strategic sabotage*. It is facilitated by the dynamics between large corporations and key government organs and is conditioned, influenced, and oriented by the logic of capital.

Overall, considering the intertwinement between leading corporations and government organs is essential to understanding the dynamics of capitalism and the possibilities for socio-ecological change.

3. **Element of dynamics III** (Power foundation of growth) – Since CasP conceptualises capitalism as a mode of power instead of a mode of production, the implication is that capitalism is primarily driven by power rather than growth. Capitalism is driven using power processes that shape and reshape society and the socio-ecological world, providing advantages to some groups at the expense of others. The social order is ever transforming through the dialectic between imposition and opposition, and power relations are often organised through hierarchical processes and organisations such as corporations and governments. Hierarchical power processes require energy and material resources to maintain themselves and exert control over the opposition. In turn, material-energetic conditions influence how hierarchical power processes unfold, enabling capitalist groups to extensively capture energy and extract materials. The creation of hierarchies can be seen as unfolding according to two different regimes of accumulation: breadth and depth. As it was delineated, breadth means growing sales faster than average, while depth relates mainly to increasing profits per sale. The two regimes tend to move countercyclically to one another. The creation of hierarchies through the dialectic of power is central to capitalist dynamics, and the ability to capture energy and extract materials allows for the creation of larger and taller hierarchies. The CasP perspective is different from conventional capital theories, which assert that capital owners need to increase the productivity of their processes to be competitive and maximise profits.
4. **Element of dynamics IV** (Asymptotes of power) – If we accept that capital accumulation inhibits socio-ecological change through different modes of sabotage, the obstacles posed, however, cannot be considered absolute. By progressing out of non-linear processes of change, degrowth transformations and those led by other groups could impede dominant capital's confidence in its ability to shape the future and pave the way for a tougher period for capitalists when it comes to hindering degrowth transformations. Indeed, uncertainty about the future and loss of confidence in their ability to maintain control can be a significant problem for capitalists, whose order is shaped by the forward-looking process of

capitalisation. Bichler and Nitzan proposed the concept of *systemic fear* to explain periods when capitalists think they have reached an “asymptote”, when they do not see an easy way to further their relative power over society and may fear losing their grip. When their ritual of capitalisation is punctured, the very continuation of the capitalist mode of power is called into question. When the ruling class is no longer certain of its ability to govern, it becomes indecisive, fuelling opposition, and effective opposition can more easily bring about systemic change. This is the point at which the dominant capital groups can lose control, collapse of the capitalist system becomes possible, and the unfolding of degrowth transformations beyond capitalism and the economy could reach heights.

5. **Element of dynamics V** (Interconnected modes of degrowth transformation) – In the context of degrowth transformations, interstitial transformations involve individuals and groups experimenting with changes through autonomous spaces and initiatives that exist in the margins of the capitalist system. By contributing to the reconfiguration and circulation of new meanings, materials, and competences, these changes challenge the dominant growth paradigm and promote alternative visions for the future. On the other hand, they can build on the new elements circulating via interstitial transformations, symbiotic transformations seeking to change existing practices and institutions within society, especially via political institutions where it is necessary to negotiate and compromise. Finally, ruptural transformations seek to disrupt capitalist processes through direct confrontation. These transformations can challenge a range of areas, from small practices to core capitalist complexes, by interrupting undesirable practices to create space for new practices to emerge or other (more desirable) practices to grow. While a number of degrowth studies have already used this typology or a similar one (Demaria et al., 2013; Parrique, 2019; Schmelzer et al., 2022; Schmid, 2021), the connections, or even the continuity (Pelenc et al., 2019) between the different modes of transformation have barely been explored. This dynamic suggests that three modes of transformation interplay in a complementary way in the context of degrowth transformations, and each has a crucial role to play in bringing about a degrowth future, including ruptural transformations that are so far under-considered (Chertkovskaya, 2022).

6. **Element of dynamics VI** (Modes of sabotage of degrowth transformations) – The process of hierarchical complexification involves an augmentation of capitalist power by making the practices that compose society increasingly subordinate to differential capitalisation and accumulation practices. This process can hinder the emergence and performance of alternative practices by saturating interstices and limiting the possibilities for finding and exploiting gaps within the capitalist creorder. Moreover, dominant capital groups can capture alternative practices and movements to maintain or improve their position in the race for differential accumulation, leading to the dilution or abandonment of the original goals and values of these movements. The process of rupture is also used by capitalists to undermine resistance to their power, leading to the disruption of degrowth practices. These processes can inhibit the potential for interstitial, symbiotic, and ruptural transformations. The saturation of interstices limits the possibilities for interstitial transformations to emerge and develop, while the capture of dissenting practices and movements impedes symbiotic transformations that aim to reform institutions and core relations. Ruptural transformations, on the other hand, are undermined using the process of rupture employed by capitalists. Thus, the various processes of hierarchical complexification, saturation of interstices, capture, and rupture reduce the space of possibilities to the transformative potential of degrowth practices.

In conclusion, the six elements of dynamics presented in this thesis offer a comprehensive understanding of the dynamic relations between degrowth and capital accumulation. They highlight the challenges and opportunities inherent in the pursuit of degrowth within a capitalist society, underscoring the importance of resistance, disruption, innovation, and alternative forms of organisation. While the path to degrowth is complex and full of challenges, the insights gleaned from this analysis provide a robust foundation for further explorations and interventions. Ultimately, the aspiration is to contribute towards a systemic transformation that disrupts the dominant growth paradigm, fostering a sustainable, just, and pluriversal society.

Contribution 3

By developing six elements of dynamics in a systemic fashion, visualised easily as CLDs, this research has dissected the intricate relationships between degrowth and capital accumulation. This study explored key dynamics between degrowth transformations and core dynamics of

differential accumulation, as well as the interplay between *modes of degrowth transformations* and *modes of sabotage* undertaken by dominant capital groups. In this context, I have proposed newly defined concepts to explore multiple facets of strategic sabotage: *hierarchical complexification*, *saturation of interstices*, *capture* and *rupture*. On the whole, these findings provide a comprehensive overview of the potential dynamics involved in the unfolding of degrowth transformations against capital accumulation, as well as a solid foundation for further investigation, with the overarching goal of catalysing a degrowth transition.

6.2.4 Possible pathways

While the elements of dynamics offer a view on different interconnected processes that play a role in the unfolding of degrowth, they can unfold in multiple ways. Drawing upon the combined elements of dynamics, qualitative scenarios are essential tools for reflecting on possible future trajectories and helping to make sense of the proposed elements of the theory of change. Spanning the next thirty years in Western capitalist society, these four scenarios imagine distinct possibilities for the future interplay of capitalist power and degrowth transformations.

In the scenario entitled “**Transformative efforts in the shadows of dominant capital**”, the potential for degrowth transformations is hindered in a global context where powerful capital groups, particularly those with significant influence in extractive industries such as energy, electronics, and food, hold dominance. These prominent entities, intricately intertwined with governing institutions, sustain cycles of expansion, guaranteeing their ongoing accumulation of economic resources and relative power. In light of the inherent uncertainty surrounding socio-ecological circumstances and the resulting apprehension it generates, capitalists strategically employ their influence to avert the possibility of system-wide failure. Socio-ecological movements that advocate for degrowth encounter substantial obstacles due to the marginalisation of their endeavours by dominant capital groups employing strategic sabotage. The implementation of strategies such as hierarchical complexification, the saturation of interstices, and capture and rupture serves to maintain the unchallenged dominance of capitalist practices, thereby hindering the progress of degrowth transformations, which face significant resistance and struggle to gain momentum.

In the “**Dance between emerging degrowth practices and ‘greener’ rulers**” scenario, the main disruption considered is the explosion of interstitial transformations. Degrowth practices permeate various sectors of society and spark a slew of experiments

ranging from the rise of non-profit cooperatives to institutional shifts. However, dominant capital groups adapt to this movement, with some taking advantage of the “green” trend to increase their relative power within the capitalist framework. Large corporations adopt “sustainable” practices and brand themselves as “green” to gain public and government support. While environmental disruptions alter the power balance among dominant capital groups, the overall capitalist creorder¹¹⁸ remains intact. This is not just a shift to “green capitalism”; it emphasises the asymmetric nature of capital accumulation, in which socio-ecological events spark conflict among capitalists. Despite the expansion of degrowth initiatives, capitalism’s core power dynamics remain largely unchallenged due to the effective sabotage strategies employed by dominant capital groups.

The third scenario, “**Navigating the tides of post-growth capitalism**”, depicts a society that is beginning to shift away from a focus on growth, influenced by rising growth criticism and restrictive policies. However, the degrowth movement gains traction, the fundamental tenets of capitalism remain intact. Dominant capital groups, which include major corporations and government entities, respond to this shift by capitalising on the “post-growth” narrative, maintaining differential accumulation through strategies such as stagflation and cost-cutting. As a result, power is redistributed upward, resulting in social conflicts. Although degrowth transformations challenge traditional capitalist power relations, dominant capital entities frequently sabotage these efforts, ensuring that the capitalist framework remains dominant.

In the last scenario, “**Holistic degrowth shift**”, society transforms following a degrowth paradigm, successfully challenging entrenched capitalist power dynamics. Degrowth transformations, such as community cooperatives and energy-sharing programmes, are spreading globally as a result of socio-environmental factors. Grassroots movements, policy reforms, and counter-hegemonic ideologies combine to destabilise dominant capitalist groups. As these capitalist entities face increasing resistance and systemic fear, the effectiveness of their traditional sabotage methods dwindles. Degrowth transformations build on this momentum by enacting policies that prioritise social well-being, environmental sustainability, and resource equity. As a result, previously marginal practices become mainstream, resulting in a holistic degrowth society in which capitalist

¹¹⁸ See Section 3.2.1.

power relations are significantly disrupted and a new societal order prioritises ecological justice and well-being.

The four scenarios have no ambition to predict the future, but rather to provide a clear explanation of possible dynamics of change proposed in this research. Overall, while the concept of degrowth proposes a departure from capitalism, this thesis partially fills a gap in the lack of comprehensive theoretical approaches to investigate the practical aspects of how capitalism and degrowth may clash or intertwine. Although there is a growing body of knowledge on the need for a degrowth transition, and a growing body of literature addresses many policy proposals and initiatives, there is limited discussion of how capitalist dynamics actively enable or hinder degrowth transformation processes. Thus, this thesis attempts to fill the deficit of a fully-fledged theory of change that can explain how a post-growth society can emerge despite the many adverse forces within modern, globalised capitalism. By imagining theoretically grounded pathways of change, showing complex processes through which degrowth transformations may or may not unfold, I have put the spotlight on processes that need to be more on the radar of degrowth scholars: the role of the largest corporations and their intertwinement, the ongoing enfoldment with key government organs, and the ways they together undertake sabotage and inhibit socio-ecological change.

Necessarily, this process has limitations, which I address in the next section, before building on them to suggest future research avenues.

Contribution 4

This research further examined the relationship between degrowth transformations and capital accumulation's power dynamics in four scenarios. In the first scenario, 'Transformative efforts in the shadows of dominant capital', dominant capital groups maintain a tight grip on socio-ecological processes, making a transition to degrowth difficult. The second scenario, 'Dance between emerging degrowth practices and 'greener' rulers', sees the rise of degrowth-oriented practices, but they face capture by dominant capital groups, leading to a reshuffling of power within these groups. The third scenario, 'Navigating the tides of post-growth capitalism', envisions a world where growth is no longer the primary objective, but dominant capital adapts to maintain its differential power, challenging the notion that post-growth capitalism is contradictory. Lastly, 'Holistic degrowth shift' led to a swift transition away from growth and challenged challenging the hierarchical power of dominant capital. This study emphasises power dynamics in shifts to degrowth and encourages critical thinking about the future. It also

provides a more tangible view of change trajectories, making it a useful tool for discussion rather than predictions.

6.3 Limitations and future research

Despite the critical examination of degrowth and capital accumulation's power dynamics in this study, it is critical to consider the study's potential limitations and challenges. This section examines limitations both in terms of onto-epistemology and in terms of theory building.

6.3.1 In terms of onto-epistemology

6.3.1.1 An inadvertent contribution to economism?

One such challenge is the research's unintentional perpetuation of economism, even as it seeks to critique it. The research's foundational terms, particularly "degrowth" and "capital", can be seen as embedded in the economic imaginary. While "degrowth" challenges the dominant growth paradigm, the term itself is defined in opposition to it. This opposing framing may unintentionally reinforce the economic structures it seeks to criticise (Dean, 2014). Similarly, even when criticised or redefined, the concept of capital remains, for most, part of economic thought. However, departing from them remains a challenge as they are not pure theoretical categories; they are used in everyday life.

On this issue, Kallis (2018) identified a conflict in degrowth research. One stream, rooted in ecological economics, tends to remain within the confines of economic thought, focussing on the long-term viability of an economy that does not grow (see also Section 2.4.3). The "culturalist" stream championed by Serge Latouche (2009a), on the other hand, seeks to decolonise the imagination from economics. The term "degrowth" may not always convey this distinction, particularly to those outside the nuanced debates, potentially leading to ambiguities that can perpetuate economistic thinking – although only if we remain at a superficial level of understanding:

“Does the term degrowth undermine this intention? Yes, in quick communication to someone unfamiliar with the full argument; yes, for someone not immersed in the debates distinguishing the second approach from the first. But, no, not in terms of content.” (Kallis, 2018, pp. 160-161)

Then, while CasP offers a radical rethinking of capital by emphasising power dynamics, it may not be entirely free of economism. Its emphasis on differential

accumulation and the quantification of power echoes the drive to measure and quantify that underpins economism. By focussing on capital as the primary representation of power, the study may unintentionally limit the investigation of other non-capitalist forms of power. Without complementary perspectives, CasP may fail to capture the full complexities of power dynamics. In other words, it risks ignoring critical aspects of power that do not fit within a political economic framework.

To truly break free from economism, the development of new conceptualisation and articulation strategies for socio-ecological transformations is needed. While this research has made significant progress in this direction, the question remains: how can we articulate these transformations without resorting to the frameworks of economism?

6.3.1.2 Onto-epistemological consistency

Given the complexity of the theoretical assemblage and the amalgamation of various theoretical fragments, the thesis is bound to struggle with maintaining onto-epistemological consistency. The act of connecting disparate theoretical threads, each with its own ontological and epistemological underpinnings, introduces the possibility of inconsistencies. These inconsistencies may appear as contradictions, overlaps, or gaps in the conceptual framework, affecting the coherence and robustness of the arguments presented.

It should be noted that ensuring complete ontological and epistemological consistency in such a complex and multifaceted research endeavour is nearly impossible. The interaction of various theories, each with its own worldview and assumptions, can result in subtle (or even glaring) mismatches that are not always obvious. Given this inherent difficulty, it is critical to approach this thesis' findings and propositions with caution. While every effort has been made to ensure coherence and consistency, the possibility of onto-epistemological differences cannot be completely eliminated.

In essence, the pursuit of onto-epistemological consistency in an interdisciplinary and holistic research project is both a challenge and an aspiration, a gesture. At the same time, it is a limitation and a reflection of the complexity and depth of the investigation.

6.3.2 In terms of theory building

Theory building is a delicate dance between breadth and depth. In this scenario, breadth refers to the incorporation of a diverse range of factors, perspectives, and contexts into our model. This expansive approach led to the inclusion of a variety of aspects and

subtleties in the issue, spanning social, productive, financial, and political arenas. However, this increased scope can sometimes sacrifice depth, leaving the finer details and complexities of individual elements or dynamics less explored or understood.

This compromise between breadth and depth reflects a similar balancing act between holism and reductionism. A broad examination typically aligns with a holistic approach. By considering a spectrum of elements and contexts, we gain a more comprehensive understanding of the system as a whole and the interplay between its parts. Conversely, a more detailed investigation often leans towards a reductionist approach. Concentrating on the specifics of single or a few elements allows for a deep understanding of these isolated parts and their function.

Striking a balance between these polar opposites – breadth and depth – inevitably results in some limitations. In this research, I aimed to create a holistic view of degrowth that opposes capital accumulation. To make the problem less complex, I consciously simplified it by creating CLDs. However, this simplification has necessarily involved overlooking certain subtleties. While acknowledging these research constraints, they also serve as gateways for future investigation.

6.3.2.1 Breadth

In terms of breadth, the primary focus is on aspects of the conflict between ongoing differential accumulation by dominant capital groups and degrowth transformations, while pivotal, sidelines other dynamics such as the role of money and debt (Di Muzio & Robbins, 2016), and a variety of socio-ecological processes that could challenge or support capitalist power – the facets of sabotage are potentially infinite. The conflict between dominant capital and the rest of society is, however, not the only encompassing power process that characterises our societies. Interplay with other conflicts, including racism, patriarchy, gender oppression, and other forms of discrimination, should be equally important to understand how degrowth transformations may unfold. Although these power processes are not directly represented in the model, there is little doubt that they intersect or are inherent to capital accumulation. On the other hand, degrowth transformations are widely defined, they may also include feminist and decolonisation struggles that can be captured, ruptured, marginalised through saturation and controlled through hierarchical complexification and other processes that should be explored.

Future research making these links more visible is especially important as many in the degrowth movement have recognised that building alliances with different movements is of key importance to bring about transformative change (Chertkovskaya & Paulsson, 2021; Treu et al., 2020). Although it is implicit that degrowth transformations can emerge from a variety of allied actors, the dynamics proposed in this thesis do not include these processes. Remaining in line with existing degrowth thinking, no specific group is ascribed a historical role in societal change¹¹⁹, but the suggested dynamic may help identify sound entry points for alliances.

For instance, degrowth proponents could explicitly ally or overlap with workers' movements against cost-cutting and differential price increases, as they grasp the connections between these processes and growth (see Section 3.4.2.4). Another illustration involves an alliance between two types of movements in terms of the means of action. The first type aims to progress towards a post-growth society in a relatively methodical and predictable fashion (e.g. by engaging in the formal political arena). The second type is forms of resistance movements striving to induce profound uncertainty for capitalists (e.g. through more subversive dynamics). This strategy could effectively increase systemic fear among capitalists, thereby opening up opportunities for transformative change (refer to Section 3.5.1). While broadening future horizons, it calls for further research into these types of entry-points for alliances, as well as the role and dynamics of alliances of movements and actors for degrowth transformations.

Therefore, the development of a single, all-encompassing theory of change for degrowth presents a formidable challenge that might not be necessary. Due to the multifaceted nature of change, a plurality of perspectives and methods is required. Overall, the elements of dynamics proposed here involve simplifications and underscore the need for more expansive research to explore the diverse dimensions and potentialities of the unfolding of degrowth.

6.3.2.2 Depth

In terms of depth, one limitation of this thesis arises from the need to keep the interconnected processes simple. The CLDs representing the different elements of

¹¹⁹ “Degrowth calls for a wider struggle where revolutionary agents are not merely fighting for a piece of the cake but for autonomy over its recipe and in defence of the social-ecological foundations that allows its existence” (Parrique, 2019, p. 430).

dynamics for the theory of change cannot avoid simplifying the complexities. The choice of variables (processes to be included) is inherently subjective, and there is a risk of omitting relevant processes or oversimplifying the relationships between them. Therefore, the proposed theory of change should be considered provisional, and further research would be useful to refine and expand it.

In addition, the scope of the elements of dynamics proposed in this thesis is quite general. As explained in Chapter 1, the main focus of this thesis is not empirical, and the elements of dynamics should be considered provisional hypotheses that can be completed if the question investigated becomes more specific to a particular context or domain. This limitation is also linked to the mainly theoretical focus of this research at the expense of a more empirical endeavour, although it is based on theories backed by ample empirical evidence and enhanced with references to empirical examples. For example, the four modes of sabotage of degrowth transformations proposed in Chapter 4, and conceptualised with SPT, could be further developed by studying in-depth existing processes empirically. At a time when oil magnates are taking control of climate conferences, exploring the many facets of the intertwinement between leading corporations and key public officials and institutions is particularly crucial. Furthermore, some aspects, such as the link between systemic fear and the possibilities of systemic change, are speculative (see Section 3.5). They need to be revisited as new evidence becomes available – and this theory of change could guide that exercise both qualitatively and quantitatively. Special attention should be paid to empirical evidence and theoretical contributions from more diverse geographical origins. Indeed, strategic sabotage, the intertwinement between corporations and governments, and the uneven distribution of power are universal processes in modern capitalism, but they unfold in different ways, in different places. This is especially important given that CasP research mainly draws on evidence from Western countries and especially the US – which is the clear epicentre of capital accumulation at the global level.

Regarding the scenarios developed, one limitation is that they originate from my own perspective. However, this was intentional; their objective was to clarify the elements of dynamics. However, if the emerging theory of change had to be used for more practical intents, critiquing, refining, and improving it should be better done as a participatory exercise or *praxis* – understood as the dialectic process of attempting to

understand the world as it currently exists, envisioning a desirable future, and taking concrete action to move towards that vision, while feeding theorisation.

In conclusion, the inherent conflict between breadth and depth has been pivotal in shaping the contours of this study. This has led to the building of a theory of change that, although necessarily including simplifications, provides a valuable lens through which to explore the unfolding of degrowth transformations against the power process of capital accumulation. As researchers, practitioners, and active participants in the world, our task is far from complete. Instead, it continues as a dialectic process, a dance between understanding the state of the world, envisioning a desirable future, and taking action to move towards that vision, all while continuously refining our theories. As we walk this path, we must remember that our perspectives are only one of many threads in the intricate tapestry of degrowth futures.

6.4 Final reflections

Global catastrophes are escalating, casting long shadows across the world. Their toll is already being counted in human lives, and they threaten to render existence untenable for many more. Children born this year could potentially face a world heated by 4 degrees Celsius or more (compared to the pre-industrial era), its biosphere ravaged beyond recognition. We stand at a precipice, while an insistent call for a different trajectory refuses to be silenced. Science is increasingly clear, and affluent societies must abandon the growth paradigm that endangers the socio-ecological world – and thereby urgently reimagining our foundational principles, while daring to envision and enact alternative pathways.

However, how can this monumental shift occur from within the confines of capitalism and specifically against the crucial process of capital accumulation? In this context, it becomes essential to develop a sufficiently holistic and power-centred perspective on the shaping and re-shaping of capitalism and growth that reunites what can only be understood together – economy and politics. The very way we define capital has a huge influence on what we consider capitalism and how we think it can be transformed. If capital accumulation represents a process of differential power, the mosaic of degrowth proponents is facing an ongoing, tentative usurpation of society's ability to shape its future by leading capitalists allied with key government entities and other institutions of power.

Consequently, the degrowth transition should, in addition to challenging growth be equally be a process of *differential de-accumulation*, with its sights set not only on growth but capitalisation in its quantitative and qualitative facets. Degrowth advocates cannot be satisfied with initiatives and proposals that make sense and blueprints of desirable futures, however convincing they may be, but they should also crucially challenge the massive differential power of leading corporate-government coalitions at the heart of capital accumulation that keep cancelling the very future they desire. To chart a course towards a post-growth society, I urge those willing to bring about socio-ecological transformations to research in much more depth the manifold modes of sabotage entrenched within the dynamic imposition of order – their abilities to close future possibilities and augment their power.

While the dynamics of change discussed in this research stem from a mainly theoretical and speculative exercise, the hope and struggles for moving beyond capitalism can be widely found in actual resistance to capitalist power. In this respect, I will conclude where I started this journey, with the food system, borrowing the last words of this thesis from a Belgian farmer:¹²⁰

“Capitalism has emerged as the sole and ultimate model. We would therefore be forced to accept its rules and practices, regardless of the human and environmental conditions we would have to exploit. This situation angers us, but doesn't stop us; despite everything, we want to continue to think about and experiment with a different world, one that is alive and united. So we are taking a stand in this bankrupt world. This opposition and these intentions set us in motion, and it has become cowardly not to take them on publicly. We are not resigned; the present is our battleground, and our utopias the living fruit of our struggles.” (Réseau des GASAP, 2016; mt)

¹²⁰ Jonathan Derenne, member of “Réseau des GASAP”.

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